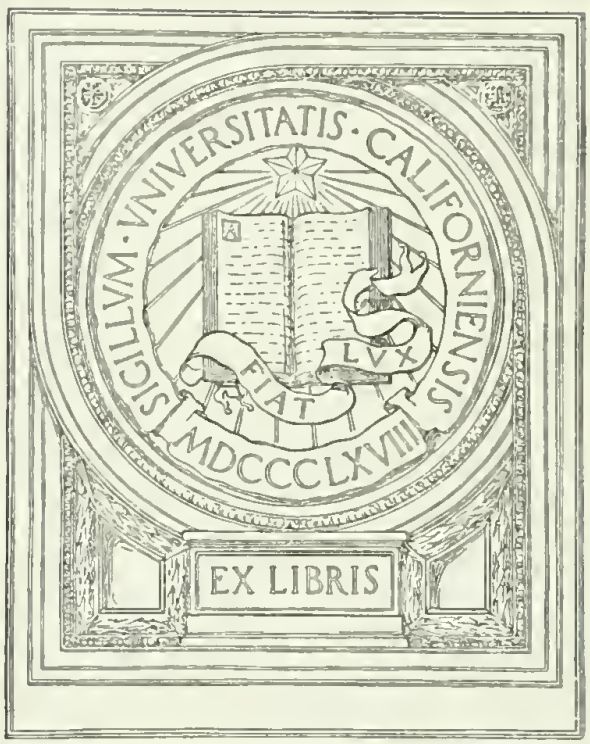
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THE

MARRIAGE OF NEAR KIN

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THE

MARRIAGE OF NEAR KIN

CONSIDERED WITH RESPECT TO THE

LAWS OF NATIONS, THE RESULTS OF EXPERIENCE

AND THE TEACHINGS OF BIOLOGY

BY

ALFRED HENRY HUTH

SECOND EDITION, REVISED

. . . . 'FRAGT NICHT DEN WIEDERHALL EURER KREUZGÄNGE, NICHT EUER VERMODERTES PERGAMENT, NICHT EURE VERSCHRÄNKTEN GRILLEN UND VERORDNUNGEN! FRAGT DIE NATUR UND EUER HERZ, SIE WIRD EUCH LEHREN, VOR WAS IHR ZU SCHAUDERN HABT, SIE WIRD EUCH MIT DEM STRENGSTEN FINGER ZEIGEN, WORÜBER SIE EWIG UND UNWIDERRUFLICH IHREN FLUCH AUSSPRICHT'

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PREFACE.

THOUGH many writers have treated on the subject of consanguineous marriage, from many points of view, no one has hitherto come forward with a generalisation of their work, which lies scattered and buried in a mass of pamphlets and periodical literature, difficult to hear of, difficult to find, and requiring considerable time and thought to digest. The consequence has been that people have been unable to judge of the relative value of the various observations they may read or make, and from a want of the necessary perspective are liable to draw wholly wrong and sometimes ridiculous conclusions.

In this work the author has endeavoured to gather together everything of importance that has been written upon the subject; to arrange and classify it, to weigh the evidence on either side, to reject what is worthless, and point out the value of what remains. In this investigation he has attempted to divest himself of all prejudice, whether of tradition or custom, which might tend to warp his judgment, and has, therefore, often found himself obliged to treat as debatable, assumptions which inveterate association has rightly made shameful to doubt, but which, undisturbed, would make the discovery of truth impossible. The importance of the subject, the happiness of many people, the elicitation of truth, he conceives are sufficient to justify him in this course of an inquiry which he would have been content to

leave to the common sense of the present age, in which theories are no longer adored because our fathers have believed in them, had not all-prying science lit upon the question, and after her fashion made men doubt truth to be a liar, in order that they might doubt those things also which are not truths.

During the time that has elapsed since the first publication of this work, something has been added to the immediate literature of consanguineous marriage and the advance in those branches of biology and anthropology most closely connected with it has been great. While therefore the general plan and most of the matter of the previous edition remain unchanged, a considerable portion of the work has been rewritten, and the whole generally brought up to date. The author, however, has had no occasion to modify the conclusions at which he originally arrived; indeed, the tendency of subsequent observation and observers has been rather to strengthen and confirm those conclusions than to weaken them in any way.

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PEDIGREES

THE

MARRIAGE OF NEAR KIN.

INTRODUCTION.

LIKE the rest of our legislation, the law of marriage is a fortuitous agglomeration of acts and judgments, about which we trouble ourselves extremely little. And yet perhaps it is the most important of all our laws. On it depends the law of inheritance, by which all property is governed, and over which many nations have been divided among themselves ; and, what is more important still, on it depends their morality, and with their morality their strength as a nation. For if a man is not bound to cleave to one wife he certainly will not trouble himself to educate his children, or for their welfare pinch and save ; wherefore, instead of servants, they would grow up enemies to the State, a miserable, ignorant, and incapable set of beings, who could conduct their country nowhere but to its ruin. Indeed, without marriage there would be no State, and no people to govern. It is a fallacy, as every sensible man knows, to think that it is sufficient that infants should be born, and that it is the duty of the State to see that they are properly brought up. The experience of foundling hospitals amply shows that this is not an economical method ; State-nursing and Government schools would also, as a monopoly, fail, as monopolies do ; and, lastly, but by no means of least importance, is the fact that such a system is contrary to human nature, and therefore could not succeed.

But, granting for the moment that we could do without the marriage tie, and the State could take care of the infants, it is more than doubtful whether the population would not actually dwindle to nothing. People would not care to have children, and they certainly would have but few children whether they cared to or not ; and yet it is a vital necessity not only that the population should be as much as the State can support, but that it should be more. For in a population which remains stationary every one may find employment ; while in a population which increases in excess of its means of support a certain proportion must either emigrate or die. In the first case, therefore, the clever and stupid are equally employed, the weak as well as the strong ; in the second case, the State selects the strongest and cleverest, while the weak and stupid die out or emigrate. There can be no doubt that of two countries, one of which had a stationary population, and the other an increasing population, which would ultimately overcome the other, or which would exist the longer, enjoy the greater amount of happiness, and progress the faster.

Since, then, the marriage tie is of such supreme importance, all things tending to make it insecure or difficult should be got rid of at once. Marriage should not be taxed as it now is, the contract should be clear and easily proved, and no impediment should be thrown in the way of a marriage which is not likely to produce unhealthy offspring, other than the natural and only harmless impediment, want of means ; since every impediment directly tends to produce immorality, and immorality is directly and fatally injurious to the community.

The first condition is easily secured, because it only requires a little mechanical arrangement ; but how are we to know whether a given couple should be allowed to marry or not? When either party is insane we do not allow it, because we know that the chances are the progeny would also be insane. If a parent of either had become insane after marriage then we should not prohibit it, because, though there would be a good chance that insanity was hereditary in the family, yet there would also be a good chance that the children might escape any hereditary taint, and the risk of

prohibition would therefore be too great : we could not, for the sake of possible good, drive to a positive evil. Yet we prohibit marriage between near kin in certain degrees of blood relationship and affinity. How did we come to prohibit any of these marriages, and how have we come to draw the line as it stands at present?

The sole reason why we now prohibit these marriages is that our fathers did so, and their fathers did so before them. Yet our fathers permitted marriage between crétins, lepers, and between many other persons, in cases where we should now prohibit it. Why, then, should they have prohibited marriage between near kin? Did they observe that the progeny were diseased in any way, as we observe that the children of the insane are insane? This they certainly did not ; for we ourselves cannot show it to be the case, even with the aid of what statistics we have got ; nor do they give that as a reason in their writings. All we have known hitherto is that these prohibitions have constantly been questioned, that they have been made more severe by lawgivers, and less severe, again, by powerful individuals, or by the steady weight of public opinion. But public opinion means public practice; and public practice, when it is against the law, tends to bring the law generally into contempt. When the popes prohibited marriage within very wide degrees, the people only made use of these prohibitions either to live immorally or to get rid of their wives or husbands, as the case might be. Nothing is more evident than that it is useless to prohibit marriage beyond certain degrees. Marriages may be prevented in some measure, but immorality, the consequence, cannot be; the remedy is worse than the evil. It is true that marriages between near kin have been accused in modern times of producing all those diseases of the nervous system and malformations which we in our ignorance cannot as yet satisfactorily account for. But they are not prohibited in wider degrees, simply because none of these assertions can be proved. We should, in our ignorant endeavours to prevent idiocy and deaf-mutism, madness and malformations, greatly increase immorality and contempt of the law, and certainly

increase those very diseases, because immorality does produce them indirectly, as we shall see. At the same time we should be trying nothing but a gigantic experiment; and even if we succeeded in stopping these marriages we should not get rid of the diseases; because, even supposing for the moment that these marriages are a cause at all, no one supposes them to produce more than a fraction of the insane or malformed.

Since the question of the alleged harmfulness of marriages between near kin is the object of this work, it will be useless to argue it any further at this point. It is essential, however, in a question of this kind, as indeed in any, that the premises should be perfectly clear, or the argument will be worthless; and this question has had its full share of indistinct statement and irrelevant answer. The consequence is that there is a widely spread uncomfortable feeling that consanguineous marriages are to be avoided if possible; but if Angelina insists on having Edwin, and Edwin is fortunate enough to make Angelina persist in her intention, why, let them marry and may they be happy!

We will therefore put the following questions before ourselves:—

I. Whether consanguineous marriages are themselves, by the mere fact of consanguinity, and irrespective of any inheritance, injurious to the offspring. Whether, in a marriage between two relatives who are both perfectly healthy, live under healthy conditions, and whose families are perfectly healthy, the children born will probably be unhealthy?

II. Whether consanguineous marriages give a greater proportion of unhealthy children than non-consanguineous marriages; or, in other words, whether it is a fact that consanguineous marriages, through intensification of a previously dormant hereditary family taint, give a greater proportion of unhealthy children?

The first is a question of creation; the second a question of inheritance. Hence we may safely apply experiment on the organic world to the former, and the result, when no harm is done, will be favourable to the harmlessness of these mar-

riages; but if there are any evil results we cannot say they were created by the consanguinity, since we cannot know but what inheritance has come into play. Hence, for the first question, the only method of investigation is a negative one. For the second question the only method is a statistical inquiry, so contrived as to include the whole population of a large country; that is, so contrived as to overpower, as far as possible, disturbing causes.

This last method is so obvious that we cannot but feel surprised that it has never yet been tried. These marriages have been accused of causing sterility, malformations, the diseases of the mind and of the senses, of rickets, albinoism, phthisis, and crétinism, and even of the production of hydatis![1] Surely this was enough to attract the attention of the most callous Government—surely such a question as this would enter into the census!

The fact is that the common sense of the world rejected these theories. People had married cousins for generations time out of memory. They had rebelled when these marriages were forbidden, and only acquiesced in the law when forced on them by the whole weight of a powerful priestocracy, under condition that it should exist but as a tax. In these days, however, this inheritance of the Middle Ages has been revived, a spectre clothed in the garb of modern philosophy. It is a matter for surprise, therefore, that this question should not have entered into the census, despite the carelessness of the general public; but our surprise is changed to absolute amazement when we find that in 1871 this method when proposed was rejected by Parliament. Well may Mr. Darwin say, in the conclusion of his 'Descent of Man': 'When the principles of breeding and of inheritance are better understood, we shall not hear ignorant members of our legislature rejecting with scorn a plan for ascertaining by an easy method whether or not consanguineous marriages are injurious to man.'

[1] This last extraordinary statement was made by M. Aubé in 1857, and therefore ninety years after the researches of Pallas, seventy-five years after their confirmation by Goeze, and thirty-six after Bremser! It is nevertheless gravely quoted by MM. Devay (*Du Danger des Mar. Cons.*, p. 52) and Chipault (*Etude sur les Mar. Cons.* p. 103) without a word of comment.

We have no means, therefore, of ascertaining whether consanguineous marriages are so injurious that they ought to be prohibited, and yet it has been most positively asserted that they are. What are the grounds, what the proofs, that these authors have for their statements? Certainly none that can be relied upon; and yet they have contrived to excite a sort of sensation as fatal to our ease as the nurse's bogey stories are to a child.

They argue deductively that, because some prohibitions are found throughout the world, from the earliest to the present times, these marriages must therefore be harmful; and that, because there are two sexes, therefore crosses must be necessary. They argue inductively that, because in a certain number of cases they have selected of consanguineous marriage, the results as regards the progeny have been unfortunate, therefore a far greater proportion of children born from consanguineous marriages are afflicted with disease than those born from non-consanguineous marriages; and that because they find that a certain number of deaf-mutes, idiots, crétins, or what not, are derived from consanguineous marriages, therefore these diseases were caused by the consanguinity, and by nothing else.

I will attempt an answer to these allegations in the following order. I hope to show that the reason many nations have prohibited these marriages is not because they have observed any evil result. I hope to show that many communities have lived without crosses, and without any excess of disease; that the statistical evidence we possess as yet is worse than worthless; that, as far as experiment in the animal kingdom goes, the evidence tends to confirm the harmlessness of these marriages; that crosses are seldom beneficial, and often harmful; and to show that there may be other reasons for the existence of two sexes besides any supposititious benefit from crosses.

CHAPTER I.

THE ORIGIN AND DEVELOPMENT OF MARRIAGE LAW.

AT the outset of any inquiry as to the physiological effect on the progeny of marriages between persons of the same blood, we are met by the argument that unions between the sexes have been, and are, restricted in the nearer degrees of relationship, not only among all civilised peoples, but among all communities of human beings, even among the lowest and most degraded of savages. And if so spontaneous and universal a law exists, the inference is only fair that such restrictions are necessary to the well-being of the human race, that it is made necessary by physiological punishment of its neglect, and that it is developed by the survival of the fittest.

I do not deny that this argument would be entitled to the fullest weight were either the major or the minor premise true; but the restriction of unions between the nearest of kin has never been universal; while the development of such prohibitions as exist can be traced to the play of ordinary human passions and social needs, with which forethought for the offspring or experience of any evil effects has never had anything whatever to do.

This question is really a part of a much larger question: the development of morality; and I need hardly remind the reader that all moral laws have been assumed until comparatively modern times—indeed, until anthropology began to be studied as a science—to be implanted directly by the Deity in the uncorrupted human breast. But the Creator of man-

kind has also endowed him with an attribute of His own, and enabled him by the use of this intellect to appreciate in an ever-increasing degree the beauty of the laws of the universe. In the infancy of mankind he wondered at his environment as a perpetual miracle; in his youth he now wonders much more at the unity of law he sees in all things round about him. Where the savage would look upon the hand of a clock always pointing at the hour as a perpetual miracle, the civilised man admires the beauty of the mechanism and its hidden springs. And so in moral law we are able to trace its development from the incompatibility of antagonistic habits, and the unconscious choice by mankind of those rules of life which best suit his social state.

In an extremely primitive state of life the practice of incest need not be socially inconvenient (the only point which at present concerns us) any more than it is among other animals, nor excite any degree of horror among the former any more than it does among the latter. Some of the older writers, indeed, have tried to show that this horror exists among the lower animals; thus Pliny relates how a horse, on the discovery that it had committed incest, threw itself over a precipice, and was killed;[1] and Heywoode, after repeating the story, concludes with, 'If then this sinne be so hatefull in bruite beasts and vnreasonable creatures, how much more ought it to be auoided in men and women, and which is more, Christians?'[2] Even at the present day this idea is not extinct, for Walker says, 'That this aversion, however, should * * * exist among animals' is a strong proof of the impropriety of breeding in-and-in in the nearest degrees![3] And M. Devay asserts that M. Munaret 'and other distinguished observers' noticed that animals have an instinctive repugnance to incestuous unions.[4] Perhaps M. Munaret and other distinguished observers hold with Pliny that fowls have a sense of religion, that elephants understand the nature of an oath, and that dolphins prefer the name of *Simo* to all others,

[1] Pliny, *Hist. Anim.* book viii. chap. 64.
[2] Heywoode, *Hist. of Women*, pp. 176, 177.
[3] Walker, *On Intermarriage*, pp. 292, 293.
[4] Devay, *Du Danger*, etc. p. 65, note.

because their noses are turned up?[1] Ovid, although he had a great horror of incest, as is shown in the first part of the fable of Myrrha and Cinyras, is yet at a loss to see why such marriages should be forbidden, and cites the very case of animals to show that they are not forbidden by nature.[2] Indeed, incest is constantly practised by animals, and habitually by those which are polygamous. The greater number of the mammalia are polygamous, since most deer,[3] cattle, and sheep are so. In herds of about a dozen antelopes in South Africa, says Mr. Darwin, rarely more than one mature male is seen. The Asiatic *Antilope saiga* drives away all rivals, and collects a herd of about one hundred females and kids. The horse is polygamous, and so is the elephant; it is rare to find more than one adult male with a whole herd of females. The wild-boar is also polygamous, but both he and the elephant only consort with the females during the breeding season. The gorilla and several species of baboons are polygamists. Lions are perhaps the only polygamous terrestrial carnivora, but the *Pinnigradia*, with the exception of the walrus, are all so. Among birds the *Natatores* are usually polygamous; the *Grallatores* are some of them; the *Rasores* are most of them; and ostriches, the bird of Paradise, the Whydah finch, and, perhaps, humming-birds are polygamous.[4] Now, polygamy among animals means the closest incest. The strongest male drives away all others, often, indeed, kills them, and jealously keeps in his own hareem all the females of his family. Animals are, besides, much sooner mature in comparison with the length of their lives than are human beings; hence incest with them, as it includes more generations, is closer than would be possible in mankind. Nor does the incest cease when the old

[1] Pliny, *Hist. Anim.*, book x. chap. 57; book viii. chap. 1; book ix. chap. 7.

[2] Felices, quibus ista licent! Humana malignas
Cura dedit leges: *et quod natura remittit*
Invida jura negant. -Ovid, *Metam.* lib. x. ll. 329-331.

[3] The roe-deer keeps even more in families than do other deer. Two generally are produced at a birth, usually a male and a female. These pair for life, and consequently the closest in-and-in breeding is practised from generation to generation. See Macdonald, *Cattle, Sheep, and Deer*, p. 643.

[4] Darwin, *Descent of Man*, i. 267 270; ii. 362, 363, and others.

male is turned out by a more powerful young one; for a young male of the same family is far more likely to be the first in the field of combat. But enough of this question. I have met with no authority save that vaguely cited by M. Devay; and M. Devay himself cites Aubé, who indirectly shows, in accusing such unions of the production of albinoism, that he takes for granted animals have no horror of incest.[1]

If there be really an *innate* horror of incest, it ought to show itself intuitively when persons are ignorant of any relationship. But does it? Can we reconcile the statements of Quintilian and Lactantius, that incestuous unions often occurred in Rome from the exposure of infants who were reared by slave-dealers, with this supposition.[2] Not long ago Selim Pasha unwittingly married his sister, like himself, a Circassian slave. Selim had risen, as slaves often do rise in the East, to rank and wealth; and only found out by chance that his slave-wife was his sister.[3] A large proportion of Pepin's laws, says Hallam,[4] relate to incestuous connections. So probable did the authorities consider that crime that no Templar was allowed even to kiss his nearest relations.[5] The son of Ninon de l'Enclos and M. de Villarceaux at the age of nineteen was presented to his mother, and fell in love with her. At length he made such violent love that she was forced to confess her relationship; upon which he shot himself dead.[6] The story told in the *Heptameron* of a double incest was probably a true one, and became widely spread. The first part was told in the twenty-third novel of Masuccio, the second in Bandello's thirty-fifth novel, in the thirtieth of the Queen of Navarre's tales, and a modified version is current even at the present day in Italy.[7] Perhaps it may be traced to an even older source, the 'Miracles de Nostre Dame,' and its

[1] Devay, *Du Danger*, etc. p. 54.
[2] Cited by Lecky, *Hist. of European Morals*, etc. ii. 30, note 2.
[3] See Martineau, *Eastern Life*, etc. p. 53.
[4] Hallam, *Europe in the Middle Ages*, ii. 7, note.
[5] Buckle, *Misc. and Posth. Works*, vol. ii. art. 129.
[6] *Bibl. des Œuvr. relatifs à l'Amour*, etc. v. 196. In a work there cited (Tardieu, *Etude Méd. Leg. sur les attentats aux mœurs*), he says: 'Les liens du sang ne les arrêtent pas, les pères abusent de leurs filles, les frères de leurs sœurs.' See also Brantome, *Œuvres*, iii. 97, 98.
[7] Crane, *Italian Popular Tales*, p. 201.

predecessors.[1] The following epitaph composed on the actors was related to Julio de Medrano, a writer of the sixteenth century:—[2]

'Ci-gît l'enfant, ci-gît le père,
Ci-gît la sœur, ci-gît le frère,
Ci-gît la femme et le mari,
Et ne sont que deux corps ici.'

The evidence afforded by stories, ballads, and other pictures of life is contradictory. We are all familiar with tales of persons being insensibly drawn towards their kindred; such as the story of Noor ed Deen, in the 'Thousand and One Nights,' where 'blood drew to blood,' and a father is drawn to his son, but the recognition is one-sided. So again in Molière's 'L'Etourdi,'[3] Célie says to her brother

'Pour moi, je me blâmais, et croyais faire faute,
Quand je n'avais pour vous qu'une estime très-haute.
Je ne pouvais savoir quel obstacle puissant
M'arrêtait sur un pas si doux et si glissant,
Et détournait ma cœur de l'aveu d'une flamme
Que mes sens s'efforçaient d'introduire en mon âme.'

Wieland makes Don Sylvio in 'Die Abenteuer Don Sylvio von Rosalva,' which is a sort of continuation of 'Gil Blas,' drawn in some measure to his sister, who is known as Jacinta. In 'Cymbeline' there is a decided recognition of relationship. Again, in the 'Thousand and One Nights,' in the history of King Omar ben Ennuman and his sons Sherkan and Zoulmekan, Nuzhet ez Zeman is brought to her half-brother Sherkan by a slave-dealer, and 'blood draws to blood'; he loves her, but he recognises no relationship. The story is curious, since it shows that, despite the horror Arabs had at that time of incest (shown in the story of the First Calendar, where the 'wrath of God' descends upon a brother and sister), they had no idea of any evil effect on the progeny. A girl is born to Sherkan, who grows up bright, clever, and beautiful,

[1] Cited in Mr. Malcolm of Poltalloch's magnificent reproduction of the Douce MS. story liii. p. xxxi.
[2] See Dunlop's *Hist. of Fiction*, ii. 462–464.
[3] Molière, *L'Etourdi*, act v. sc. xvi.

and is betrothed to her cousin, the son of her mother's twin brother.[1] For one instance, however, in fiction for instinctive recognition of relationship there are twenty of no recognition, yet one is as dramatic as the other. In the early romances, incestuous love is by no means an uncommon theme, and the folk-lore of various peoples give many instances. Thus, in the story of Swet-Basanta, a son, separated from his mother when an infant, afterwards meets her and wants to marry her.[2] In the Austrian story of 'Besom-cast,' a certain Count Rudolf had a wife with a golden cross on her brow. The wife died, and the count said to his daughter, who also had a gold cross on her brow, 'Dear child, thou knowest how I loved thy mother; I cannot live without a consort, and therefore I am about to go forth into the wide world and seek a wife who shall, like thy mother, have a golden cross upon her brow. And if within a year and a day I find none such, then I shall marry thee.'[3] So in some of the Russian folk-tales,[4] Finnish,[5] Icelandic,[6] Italian,[7] and in every mythology generally, of every nation. The stories of Parthenius Nicenus contain several instances. The romance of Cleriadus makes the Count of Langarde in love with his niece. In the history of Amadis of Greece, Niquea is loved by her brother Anastarax. In the ballad of 'Eglamore,' contained in Percy's collection, Christabelle marries her own son, but happily finds out the relationship :—

'Sir Degrabell his troth hee plight;
& Christabell, that ladye bright,
to Church they her ledd.
through the might of god he spedd
his owne mother there he wedd,
in Romans as wee reade.'[8]

[1] Lady Anne Blunt heard a story of a brother and sister who unwittingly married near Damascus. *A Pilgrimage to Nejed*, i. 34. I am inclined to believe this is the same story as that of Sherkan.

[2] Lal Behari Day, *Folk-Tales of Bengal*, p. 105. London, 1883.

[3] Theod. Vernaleken, *In the Land of Marvels*. London, 1884.

[4] Ralston, *Russian Folk-Tales*, pp. 159, 160. London, 1873.

[5] Andrew Lang, *Custom and Myth*, p. 175. London, 1884.

[6] See the next chapter.

[7] Crane, *Italian Popular Tales*, pp. 48, 161, 198.

[8] *Percy Ballads*, ii. 380, lines 1061–1066.

The editors say that such a union is a very favourite arrangement with old romance writers, though they do not generally dare to consummate such a marriage. 'The wonderful example of God showed upon Jasper Coningham' is a ballad in point.[1] Boccaccio, again, tells a story of two men, Giannole and Minghino, who both fell in love with the same girl. The one tries to carry her off; the other stops him; they are both arrested; and then it is discovered that this girl is the sister of Giannole, and Minghino marries her.[2] Ariosto makes Bradamante furiously jealous of Marfisa until she is calmed by the miraculous voice from the tomb telling her she is Ruggiero's sister.[3] In Day's 'Law Tricks' a brother, who does not know of his relationship, wishes to marry his sister. In Massinger's 'Guardian' a sister has no inkling of her relationship to her brother; and in the same author's 'Unnatural Combat' a father criminally loves his daughter. The same, reversed, occurs in Beaumont and Fletcher's 'Captain.' Defoe makes Moll Flanders unwittingly marry her brother; Goethe makes Mignon the offspring of a brother and sister who were ignorant of any relationship existing between them; Molière makes a brother fall in love with his sister, and it is only when he finds out his relationship that he becomes indifferent to her;[4] Lessing does the same,[5] and Racine very nearly the same.[6] Voltaire makes Gernance carry off his sister Acante, ignorant of his relationship.[7] Le Sage makes parents accept a child passed off upon them as their own, and laughs at 'all the fine things said of instinct and the force of blood.'[8] Indeed, as Adam Smith justly says, 'We meet with many beautiful and interesting scenes founded upon what is called the force of blood, or upon the wonderful affection which near relations are supposed to conceive for one another, even before they know that they have

[1] *Roxburgh Ballads*, iii. 104.
[2] Boccaccio, *Decamerone*, Giorn. Quinta, novel. 5.
[3] Ariosto, *Orlando Furioso*, canto xxxvi. He introduces into his story another case, *ibid.* verses lxxiii, lxxiv.
[4] Molière, *Dom Garcie.*
[5] Lessing, *Nathan der Weise.*
[6] Racine, *Don Sanche.*
[7] Voltaire, *Le Droit du Seigneur*, Œuvres, 1785, viii. 180, 181.
[8] Le Sage, *Gil Blas*, i. 47, 48. London, 1809.

any such connection. This force of blood, however, I am afraid, exists nowhere but in tragedies and romances.'[1] We have abundant evidence, further, in the canons enacted again and again for its prevention, and in the daily record of all courts of justice, that there is no horror of incest inherent, even in civilised man, sufficient to prevent that crime in the presence of a moderate amount of temptation.

The analogy of the lower animals, the habits of savage people, the records of crime, and the opinion of those whose business it is to portray human conduct are sufficient proof that, whatever the origin of the prohibited degrees, it is not due to any natural horror implanted in mankind ; and anthropologists who have studied the origin of marriage are practically unanimous that it has developed from an original state in which the sexual relations were without any regulations or limitations other than those found among wild beasts.[2] Assuming that gregariousness is, or soon becomes, natural to man, then the various communities, forced by increasing numbers to separate in search of food, will generally become hostile ; whence arises a limitation of sexual relations to members of the community only ; a state of society which Bachofen has called *hetairism.* Of any earlier stage we have no example among savages, unless, indeed, in the Macadamas of Cape York,[3] because it is generally indistinguishable, where it exists, from hetairism ; and even of the latter, which is communal marriage with no restrictions whatever as to relationship, we have only traces, if clear traces, left to us in what Mr. Morgan calls the Malayan system,[4] where relationship is only traced by generations. Here, all of my own generation are brothers and sisters ; all of the next descending generation are my children ; all of the first ascending generation are my parents ; all of the next ascending generation,

[1] Adam Smith, *Theory of Moral Sentiments*, ii. 66. London, 1822.

[2] Bachofen, *Das Mutterrecht*, p. 10 ; McLennan, *Prim. Mar.*, pp. 163, 169 ; Morgan, *Ancient Society*, p. 418 ; Spencer, *Sociology*, p. 632 ; Darwin, *Descent of Man*, ii. 362. This author and Mr. Spencer, however, think there may have been temporary unions, as among chimpanzees, for instance. Sir H. Main, *Early Law*, p. 205, thinks promiscuosity would lead to infecundity, as in the case of prostitutes ; but there is no parallel between the two, nor is such the case among the lower animals.

[3] See the next chapter.

[4] Morgan, *Ancient Society*, p. 403.

my grandparents. Another trace is left in the customs of the Turras of York Peninsula, South Australia, who, though forbidden marriage within their own clan, yet when the two clans into which they are divided meet at their corroborees exchange wives for the time.[1] The same was the case with the Kunandaburi tribe when a girl was married, and among the Narrinyeri after the initiation of a youth into manhood ; at such times no prohibition is regarded.[2] Bachofen cites the Massagetes, Nasamones, Augiles, Garamantes, Balearic Islanders, Thracians, Troglodytes, and others.[3] McLennan points out that in the Mahabharata it is said that hetairism was formerly the custom.[4] The practice of lending or exchanging wives, and licence accorded to unmarried girls, is widely spread. Bachofen further points out that when individual marriages took place the bride had in many cases to submit first to communistic marriage as an acknowledgment of the communal right.[5] Sir John Lubbock [6] also points out that the honour in which the Hetairæ were held at Athens as compared with legitimate wives was because the former represented the native women, who still practised communism ; while the latter represented strangers and captives. Mr. Spencer doubts whether communal marriage, that is hetairism, ever existed, and considers that it was merely an extremely loose state of monogamy, every man keeping his wife if he was able.[7] But there is little difference between his view and those of Sir John Lubbock, Bachofen, McLennan, and Morgan ; because none of these authors supposes that at any time there were no temporary quasi-monogamic ties, any more than Mr. Spencer supposes monogamic relations at this period of civilisation were anything more than nominal. The stage of hetairism means simply that no woman had a right to refuse any member of her tribe or community as a

[1] Fison and Howitt, *Kamilaroi*, p. 286.

[2] Fison and Howitt, 'From Mother-Right to Father-Right,' *Journal of the Anthropological Institute*, p. 35, note 3 ; p. 37, note 1, vol. xii. August 1882.

[3] Bachofen, *Das Mutterrecht*, pp. 10, 12, 15, 20, 21.

[4] McLennan, *Primitive Marriage*, p. 216, note.

[5] Bachofen, *ut sup.* pp. xix., 270.

[6] Lubbock, *Origin of Civilisation*, p. 127 ; and Appendix, p. 529.

[7] Spencer, *Sociology*, i. 664.

temporary husband, and no blood relationship formed a bar to such unions. In such a state of society it is obvious that the idea of relationship through males must be non-existent; not that the people are ignorant that a father has a share in the offspring, as Mr. Spencer justly points out,[1] but that it is impossible to trace his relationship. Hence relationship through females alone was universal at this period, and even at a later period in the history of civilisation of every people,[2] and, as we have seen in the preceding pages, can even yet be traced in nearly every primitive society.

In savage communities, unless they inhabit an exceptionally favoured spot, a large tract of land is requisite for the support of a comparatively small number of people; from which it follows that, not only must every primitive community throw off its natural increase of members, but that these new communities must soon, in the struggle for subsistence, be at enmity with each other. This state of society is admirably explained by Professor Robertson Smith in so far as it concerns the desert tribes of Arabia;[3] we see the like in the history of Abimelech and Isaak,[4] and in Australia; while in the South Sea Islands, where food was abundant, there was no enmity. In such communities, warriors are of the greatest value; a measure of a warrior's value is the number of the enemy he has slain and the booty he has taken; and the most valued booty is the captured women, who are invariably saved, as are in some cases the young children of the enemy. Women are valuable because their progeny increases the strength of the tribe, and because, too, among savage people women age so much sooner than the men that an inequality of the sexes is produced, which is scarcely corrected by the greater mortality of males in war. The booty in these cases would theoretically become the common property of the tribe, but practically the mighty men would

[1] Spencer, *Sociology*, i. 667.

[2] This is entirely contrary to the views of Sir Henry Maine, who considers the patriarchal was the primitive stage. See his *Early Law and Custom*, chap. vii. The arguments for the other side are given in McLennan's *Patriarchal Theory*. London, 1885.

[3] Smith, *Kinship and Marriage in Early Arabia*, chap. i.

[4] Genesis xxvi.

not submit to give the tribe anything but a theoretical property in the captive of his bow and spear.[1] Consequently, Mr. Fison shows that there was a temporary acknowledgment of the right of the community, followed by individual ownership ;[2] but even in such cases the captive's children were related to her, and to her tribe, and not to her husband's tribe, unless, as was sometimes the custom, they were adopted. So soon as populations became numerous enough, as I have said, for the subdivision and enmity of tribes, so soon would plunderings begin ; and the possession of slave women would inevitably become a necessary convenience of life. Hence, as Sir John Lubbock points out,[3] the capturing of wives from foreign tribes would become customary, and, as Mr. Spencer points out,[4] necessary as a proof of manhood. The impulse to the formation of individual unions, more or less stable, and condoned by occasional saturnalia, would thus be given.

Hence in every tribe in this social condition there would be two classes of women ; the foreigners, or trophies, and the natives. The sons of the former would themselves belong to their mothers' kin ; they would be regarded by their mothers' tribe as of themselves, notwithstanding that they lived and fought with their fathers' tribe.[5] They would probably retain their natural common rights to community in the women of their mothers' tribe ;[6] and hence since the only individual unions known were brought about by capture, and since there is in this state of society a recognition of the convenience of individual unions, there would be a tendency for the foreign-born sons to enter into unions with the native-born women

[1] Lubbock, *Origin of Civilisation*, p. 104. Spencer, *Sociology*, i. 651, 665.

[2] Mr. Fison gives examples of this expiation for marriage among the Australians (*Kamilaroi*, p. 53, 155, and Howitt, *ibid.* p. 202, note) and others. Bachofen cites the case of Cato giving up his wife to Hortensius (*Das Mutterrecht*, p. 19, and others, p. 174). Sir J. Lubbock gives further instances (*Origin of Civilisation*, p. 126). Mr. H. H. Johnston gives another instance among the Wa-taita, who inhabit the country east of Kilima-njaro (*The Kilima-njaro Expedition*, p. 431). The account given by Cieca de Leon (*Hist. del Peru*, fol. 99, chap. 49) of the marriage customs of Cartagena shows the same.

[3] Lubbock, *Origin of Civilisation*, p. 130.

[4] Spencer, *Sociology*, p. 651.

[5] See Robertson Smith, *ut sup.*, p. 102.

[6] See *ibid.* pp. 69, 70 ; and Fison and Howitt. *Kamilaroi*, p. 54.

by a simulated form of capture, just as though they were actually living with their mothers' tribe. Mr. McLennan and after him other writers have given ample proof of the universality of the form of capture in marriage ceremonies, implying the universality of taking foreign wives, which he names exogamy ; and has pointed out that, as far as marriage is concerned, two neighbouring tribes cannot remain in enmity for many generations and continue to take wives from each other by force, because they will in this way each contain children of the women belonging to the other tribe. The necessary result will be that marriages, though by long continued custom bound to be with foreign captured women, will actually be with partly related women under a simulated form of capture,[1] and we also arrive at the most important conclusion for the subject of this work, that the prohibition of marriage with those who were regarded as near of kin was derived from the same causes which made exogamy imperative, and not at all from any evil effect, observed or unobserved on the offspring of consanguineous marriages.

This conclusion has been disputed by various authors. Bachofen, who is better read in mythology than in modern travels, ignores the form of capture which McLennan afterwards showed was almost universal, and ascribes the development towards individual marriages as due to the revolt of women from the indignity of hetairism : 'Dishonoured by man's mistreatment of her, woman at length longs for a recognised position and a better existence. The insult she has received, the rage of despair inflames her to armed resistance.' Hence the Amazons, a stage which is followed by the gynokracy.[2] A sufficient answer to this is, that nothing of the sort has ever been observed among savages ; and female sentiments of honour, like other sentiments of the sort, do not develop from the inherent qualities of the mind, but from the outside circumstances of civilisation.[3] Mr. Spencer's opinion,[4] that the symbolic capture may partly be caused by the sentiment

[1] McLennan, *Primitive Marriage*, pp. 148, 149.
[2] Bachofen, *Das Mutterrecht*, pp. xxiv. xxv.
[3] See Ploss, *Das Weib*, i. 205, etc. : 'Die Keuschheit des Weibes.'
[4] Spencer, *Sociology*, i. 653, 654.

of coyness, is also, I think, inadmissible for the same reasons; and the examples he gives seem to me to be rather a consequence of the custom of simulated capture than a cause Nevertheless it is very possible that a physiological advantage referred to below may tend to perpetuate and enforce this apparent reluctance.[1] Mr. McLennan considered female infanticide to be the primary cause of exogamy, by producing a state of things which necessitated polyandry because of the scarcity of women, and then led to the capture of women from other communities in order that the scarcity might be amended.[2] To this theory many objections have been advanced, which seem to me to be valid. These objections are clearly put by Mr. Fison,[3] who shows that among savages in that grade of development which McLennan's theory assumes, female infanticide is not greatly practised, and that females and female children are as valuable to the community in their way as are males and male children. That among people like the pre-Mohammedan Arabs, the Hindoos, and the Chinese, female infanticide was, and is, practised to an enormous extent is rather a result, than a cause, of exogamy, and therefore will not assist his theory.[4] But neither will Mr. Fison's own views of the origin of capture as a ceremony, nor his objection to the theory that exogamy is due to the practice of capturing women, stand criticism. The ceremony he thinks to be symbolic of the struggle of youths for the female,[5] which refers its origin back to the period of hetairism. But this entirely ignores the most important feature of the ceremony, that the girl's relations and friends pretend to defend her, while the man's relations support him. He objects to McLennan that supposing a case where two neighbouring tribes who are exogamous and hos-

[1] See below, p. 22, note 5 of this work.

[2] McLennan, *Primitive Marriage*, pp. 165-174, 208.

[3] Fison, *Kamilaroi*, pp. 136-138.

[4] See Robertson Smith, *Kinship and Marriage in Early Arabia*, p. 279, note 6. Brown, *Indian Infanticide*, p. 56. The well-meant efforts of the English to put a stop to it by punishing those villages where the disproportion between male and female children is remarkable has resulted in causing male infanticide as well as female. See Mrs. King's *Diary of a Civilian's Wife in India*.

[5] Fison, *Kamilaroi*, p. 156.

tile obtain wives by capture, the result must be that all the women of the one tribe must be captured by the other tribe; that the women who are not captured must either go without husbands or husbands must be captured for them.[1] Such a state of things, however, was never supposed to exist, for the prohibition of marriage within the tribe would never arise until the children of captured women had created different tribal groups within the community, and the real hostility between the neighbouring communities had died out.

Mr. Morgan says that exogamy was due to the observed evil effects of marriage of near kin,[2] but the sole proof he gives is the mere assertion that intermixture of stocks increases mental and physical vigour.[3] Sir John Lubbock also says that one of the causes was 'the inferior energy of the children sprung from "in-and-in" marriages,'[4] neither does he give any proof.[5] Sir H. Maine agrees with Morgan on the ground that mixed marriages would give a better constitution.[6] Mr. Howitt considers the Australians introduced the prohibitions to avoid observed evil effects;[7] and Mr. C. S. Wake ascribes no other cause to the limits on intermarriage than a desire on the part of savages to avoid incest.[8] Had we no other evidence than the somewhat theoretical origin of exogamy given above perhaps this idea might be open to argument; but a consideration of the evidence that does exist makes it quite untenable. In the first place, nearly all prohibitions refer to one side of relationship only, and therefore if their purpose was to prevent incest they were ridiculously inadequate to effect that purpose. In the second place, if we are to believe with Mr. Morgan,[9] Mr. Spencer,[10]

[1] Fison, *Kamilaroi*, p. 141.

[2] Morgan, *Ancient Society*, pp. 69, 74, 409, 424.

[3] *Ibid.* p. 459. [4] Lubbock, *Origin of Civilisation*, p. 130.

[5] Yet he says (*ibid.* p. 128): 'In fact, exogamy afforded little protection against the marriage of relatives, and, wherever it was systematised, it permitted marriage even between half brothers and sisters, either on the father's or mother's side.'

[6] Maine, *Early Law*, pp. 227, 228.

[7] Fison and Howitt, *Kamilaroi*, pp. 4, 5.

[8] C. S. Wake, 'Systems of Relationship used among Primitive Peoples,' *Journal of the Anthropological Institute*, November 1878, viii. 157, 160, 168; and 'The Primitive Human Family,' *ibid.* ix. 16, August 1879.

[9] Morgan, *Ancient Society*, p. 510. [10] Spencer, *Sociology*, i. 667.

and Mr. Wake,[1] that relationship through males was partially recognised, then since no prohibitions were founded on this relationship (with some exceptions due to a more advanced stage of development, which will be considered below) the fear of incest will not explain the case ; while the theory of exogamy, given above, will. The supposition is further negatived by the extent of the prohibitions on one side, which includes in many cases whole tribes of thousands of individuals, which again would be ridiculous if due to a fear of incest, and perfectly rational on the theory of exogamy. Are we to assume that savages, whose every custom can be traced to unthinking usage imposed upon them by their circumstances, should first have observed an evil effect produced by the marriage of near kin, which we with all our modern knowledge have failed to observe, and which, as I shall proceed to show, actually does not exist ; that these savages in every country in the world should have met together and have imposed restrictions upon marriage, implying a power of the chiefs which we see in no other instance ; that wishing to prevent incest they, on the one hand, forbade marriage where there was no trace of relationship, and, on the other hand, permitted it between brothers and sisters ; that believing incest was mischievous to the community, and having power to prevent it, they should permit annual, and sometimes more frequent, saturnalia, during which not only no relationship was respected, but in many instances those persons expressly came together who on ordinary occasions were not permitted to intermarry? Can anybody, when once the facts are stated, believe for one moment that such prohibitions as we find among primitive people were introduced to prevent incest?

In good sooth there are tales related by some tribes in which they ascribe evil results to the infringement of their marriage regulations, some of which are probably due to the missionaries ; some to the class which seek to enforce the observance of customs by stories of divine vengeance for their infraction ; some to the vain regrets of old age for the hey-

[1] C. S. Wake, 'Systems of Relationship used among Primitive Peoples,' *ut sup.* p. 175.

day of their youth. That such tales exist is not remarkable; but that they are so few is very remarkable indeed. Of the class which taken in connection with the marriage prohibitions of the people where the story is found, and the source of the story itself, in all probability, is indirectly inspired by missionary teachings, is the explanation given by the people of Hawaii of the small family of Tamehameha—that he had married a relation.[1] Another is from the Greenland Eskimo, where the mother of Kakamak, finding that all her grandchildren died before they reached the age of puberty, suggests to her son-in-law, who was a stranger, 'Perhaps we are too near akin,' meaning possibly that the son-in-law might be a blood relation.[2] A third is cited by Mr. Fison from the Cooper's Creek Australians: 'After the creation,' so runs the legend, 'brothers, sisters, and others of the closest kin, intermarried promiscuously until—the evil effects of these alliances becoming manifest—a council of the chiefs was assembled to consider in what way they might be averted, the result of their deliberations being a petition to Muramura (the Good Spirit), in answer to which he ordered that the tribe should be divided into branches, and distinguished one from another by different names * * * the members of any such branch not to intermarry, but with permission for one branch to mingle with another.'[3] Of the second class of story are the objections made by some Arab writers[4] to marriages other than with strangers, on the score that stronger children will be born when there is no relationship between the parents.[5] So the Hindoos were reported to prefer marriage with one who was no relation on the same ground.[6] Again in the 'Thousand and One Nights,' fire from heaven burns up two incestuous lovers.[7] But divine punishments of the same sort follow any

[1] Cited by Gerland, *Anthropologie*, vi. 141.

[2] Rink, *Tales and Traditions from the Eskimo*, translated by R. Brown, story 73, p. 391.

[3] Gason's Dieyeri Tribe, cited in Fison and Howitt's *Kamilaroi*, p. 25.

[4] See the next chapter.

[5] Verò non absentiæ consanguinitatis causa, sed propter viro stimulum reluctatæ insollitæque concubinæ.

[6] Cited by Reich, *Ehe*, p. 211, on the authority of two Mohammedan travellers of the ninth century.

[7] Night 12.

infraction of tribal custom; if, for instance, a Chinook girl during her ordeal of puberty were to eat fish or berries, the fish would leave the streams, and the berries drop off the trees.[1] Again, the earth crumbled away, and the sea rushed in and drowned certain Kurnai who thoughtlessly showed the virile mystery, the turndun, to some women.[2] At Roebourne, in Western Australia, the natives know that a man's hair will turn grey if he looks at his mother-in-law.[3] So again ruin and darkness descended upon the land of the Hill Dyaks because one of them married his grand-daughter.[4] Nor are these judgments confined to savage people, for in England, according to Dugard, who wrote in 1673, 'if Cousin Germans have any misfortune; if an Horse dye or the Orchard does not hit, you presently know whats the cause of it. If the Flock of sheep be less'ned by the Rot, the negligence or unskilfulness of the Shephard, or the ill temper of the Pasture shall not be thought of, but it is an apparent Judgement upon the Marriage.'[5] Even in later times, according to the Scotch theologians, the grass refused to grow because incest had been committed.[6] Closely allied to these are ideas such as that related of the Kenaiyer by Sir John Lubbock,[7] where, the custom of marrying out of the mother's stock having fallen into disuse, the old people assert that the mortality has consequently risen; which is analogous to the saying of a man of the Majauka tribe of Darling River to Mr. Howitt,[8] that he believed the dying out of his race to be in consequence of their disregard of the customs and laws of their fathers.

Perhaps even more convincing than these direct statements that the prohibited degrees were not the result of any observed evil effect of consanguineous marriage, are the endeavours of thinkers to account for their origin; and here

[1] Bancroft, *Native Races of the Pacific States*, i. 242.
[2] Fison and Howitt, *Kamilaroi*, p. 269.
[3] *Ibid.* p. 291, note. [4] See the next chapter.
[5] Dugard, *The Marriages of Cousin Germans Vindicated*, pp. 50, 51.
[6] Buckle, *Miscellaneous and Posthumous Works*, i. 587.
[7] Lubbock, *Origin of Civilisation*, p. 136.
[8] Fison and Howitt, *Kamilaroi*, p. 291, note. Cf. Lucan, book viii. ver. 692:—

'Ultima Lageæ stirpis, perituraque proles
Degener, incestæ sceptris cessure sororis.

again. it is in the highest degree significant that, with so obviously fit a punishment for, or reason against, the marriage of near kin, as injury to the offspring, I know of no real scientific allegation against them before the time of Shakespeare. Some ascribe them to a fear lest relationship may become too involved; others to a fear lest affection may become concentrated within too narrow a circle; because marriage would take place too early; because people would be induced to marry each other in order that property might be kept in the family; because they are prohibited by 'God's law'; because they outrage 'natural modesty'; and, only in modern times, because they are supposed to prove injurious to the offspring.

Socrates objected to them that they generally took place between an old man and a young woman, as in the case of marriages between uncle and niece.[1] Plato in his 'Republic' does not allow the marriage of brothers and sisters; but, though in his 'Laws' he says that such a union would be hateful to the gods, yet he adds that the reason is simply habit and custom, and were such marriages permitted people would naturally marry those most like themselves, which would prevent the proper mixture of character and property, and so injure the State.[2] Aristotle feared that love would become immoderate if, to the usual ties of paternal or fraternal love, marital love were superadded.[3] Chrysippus and Zeno considered every prohibition, though between the nearest relatives, as simply absurd;[4] but Philo thought the respect we owe to a father should preclude all thoughts of marriage with his wife,[5] and in this opinion he is supported by Agathias Scholast and by Statius.[6] Plutarch took altogether a more matter-of-fact view of the question: Who would the wife have to complain to when her husband beat her should her

[1] John Taylor, *Elements of Civil Law*, p. 318.
[2] Plato, *Republic*, book v. chap. ix.; the *Laws*, book vi. chap. xvi.; book viii. chap. vi.
[3] Amyraut, *Consid. sur les Droits par lesquels la Nat. a Reglé les Mar.*, p. 223.
[4] John Taylor, *Elements of Civil Law*, p. 318.
[5] Adam, *Fortnightly Review*, 1865, p. 86.
[6] John Taylor, *Elements of Civil Law*, p. 319.

parents be the same as her husband's?[1] St. Chrysostom adopts the views of Aristotle: Are there not ties of love enough between relatives, he asks, that you should seek to draw them tighter by marriage, to the exclusion of the rest of mankind?[2] St. Augustine took also much the same view as Aristotle: the whole idea pervading his mind is that marriage between near kin is to be avoided because kindred, and with it charity, cannot otherwise be extended. So he considers that the marriage of Adam's children among themselves was not reprehensible, but if in the succeeding generations brothers and sisters had married each other, instead of marrying their cousins, that would have been wrong, for the families would then have become isolated. Marriages between first-cousins, he continues, are neither forbidden by the law of God nor by the law of man; yet he is glad to see it discouraged and rare, because it is so near to that which is unlawful, and that which one doth with one's cousin he almost thinketh that he doth with his sister; and, besides, one person thus absorbs two alliances which ought to have been employed for the increase of affinity; while, lastly, there is a certain laudable natural instinct in a man's shamefastness to abstain from using that lust upon such as propinquity hath bound him chastely to respect.[3] Pope Gregory I. alleged, in a letter to St. Augustine of Canterbury concerning the marriages of the English, that marriages between near kin proved sterile; an idea which he probably got from a misapprehension of the words in Leviticus, 'they shall die childless.'[4] Thomas

[1] Amyraut, *Consid. sur les Droits par lesquels la Nat. a Reiglé les Mar.*, p. 225.

[2] J. A. N. Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 205.

[3] St. Augustine, *Of the Citie of God, with the learned Comments of Io. Lod. Vives. Englished by J. Healey*, book xv. chap. 16.

[4] 'Quædam terrena lex in Romana republica permittit, ut sive frater et soror, seu duorum fratrum germanorum, vel duarum sororum filius et filia misceantur; sed experimento didicimus, ex tali conjugio sobolem non posse succrescere; et sacra lex Mosaica prohibet cognationis turpitudinem revelare: unde necesse est, ut jam tertia vel quarta generatio fidelium licenter jungi debeat, nam secunda, quam prædiximus, a se omnimodo abstinere debet' (*Excerp. Egberti, Arch. Ebor.* cxxxii.; Thorpe's *Early Inst. of England*, p. 337). Leviticus xx. 20, 21, has: 'And if a man shall lie with his uncle's wife, he hath uncovered his uncle's nakedness: they shall bear their sin; they shall die childless. And if a man shall take his brother's wife, it is an unclean thing: he hath uncovered his brother's nakedness; they shall be childless.' But the second verse completely

Aquinas gives a different reason from all the former: all persons, he says, who lived under the same roof were forbidden to intermarry, since were marriage between them permitted, this liberty would violently inflame their passions; but under the new law, which is the law of the Spirit and of love, several degrees of consanguinity were forbidden, because the worship of God spreads and multiplies by spiritual grace, and not by carnal love. Men must consequently be debarred from carnal things, to the end that they may rather attach themselves to spiritual matters, that love may abound in them more and more, so that friendship may be extended to a larger number by means of affinity. The prohibitions were rightly therefore extended to the seventh degree, but afterwards the Church only restrained it as far as the fourth, since it was useless and dangerous to forbid it in any further degree.[1] Another argument was advanced against these marriages by Luther, who saw no actual harm in marriages beyond the third degree collateral, but considered them inexpedient on the ground that people would marry without love merely to keep property within the family, while poor women would be left spinsters.[2] Theodore Beza harps on the confusion there would be in relationship were all marriages permitted: if a father takes the daughter, and a son marries her mother, or if father and son marry two sisters, then one in the character of brother and step-father marries his brother's step-daughter, the son marries the sister of his mother-in-law, the brother marries the daughter of his wife's brother, the son of the brother marries the mother of his paternal uncle; and thus, since relationship

refutes the meaning which might possibly be forced upon the first. A sister-in-law is no blood-relation; moreover, Moses absolutely enjoins a brother on certain occasions to marry his sister-in-law (Deuteronomy xxv. 5). The fact is that Moses pronounced the sentence of sterility as a curse; and what could be a more appropriate curse on a forbidden marriage? No severer could have been uttered in that state of society where a man is honoured according to the number of his children, and where sterility is almost universally counted as a reproach.

[1] Dally, *Anthrop. Review*, pp. 103–104, May 1864.

[2] 'Im vierten Grad lassen wirs zu, im dritten aber wollen wirs nicht zugeben; nicht zwar um des Gewissens willen, sondern um des bösen Exempels willen unter den geizigen Bauren, die würden um des Guts willen auch ihre nächsten Blutsfreundinnen nehmen. Wenn man ihnen den dritten Grad zuliesse, so gewohneten sie im andern Grad zu heyrathen. Sind doch sonst Jungfrauen gnug, warum sollen dieselben sitzen bleiben?' (Reich, *Ehe*, etc. p. 135.)

gets so hopelessly confused, it is very proper that many canons should have been enacted to prohibit such marriages.[1] Shakespeare is the first author I have met with who recommends crosses :—

> 'Our madams mock at us ; and plainly say
> Our mettle is bred out' [2]

but this may be for the same reason as Robert Burton, who urges the necessity of occasional crosses, not because in-and-in breeding creates disease, but because he considers that any previous disease in the parents becomes intensified : 'For these reasons belike the Church and common-wealth, humane and divine Lawes, haue conspired to avoide hereditary diseases, forbidding such marriages as are any whit allied ; and as *Mercatus* adviseth all Families, to take such, *si fieri possit quæ maximè distent naturâ*, to make choice of those that are most differing in cōplexion from thē ; if they loue their owne, and respect the common good. And sure I thinke, that it hath beene ordered by Gods especiall providence, that in all ages there should be, as vsually there is, once in 600 yeares, a transmigration of Nations, to amend and purifie their brood, as we alter seed vpon our land, and that there should be, as it were, an invndation of those Northerne *Gothes*, *Vandales*, *Scythians*, and many such like Nations, which come out of that continent of *Scandia*, and *Sarmatia*, as some suppose, and ouerranne, as a deluge, most parts of *Europe* and *Africke*, to alter for our good, our complexions, which were much

[1] Reich, *Ehe*, etc., p. 141. But Beza forgot that a very stringent and wide law indeed is requisite to prevent confusion if we choose to make it ; for, let A marry B, and C, his father, marry D, a daughter of B by a former husband. Then A becomes father-in-law to his own father, C. A's step-daughter becomes his step-mother. C becomes his own son's step-son. D becomes her own grandmother, because she is the mother-in-law of her mother. Let, further, D have a child, F. F is then brother of A, because both have the same father, C. But B, A's wife, is grandmother to F, her daughter's child. Therefore, A becomes grandfather of his brother. Let, further, A have a child, E. Then D, his grandmother, is also his half-sister ; and C, A's father, is at once grandfather and brother-in-law of E. A is step-father of D, who is grandmother to E. Therefore A is great-grandfather of his son. D is half-sister of E, and step-mother of A. Therefore A is the nephew of his son. The relationships in this case might be carried on indefinitely. Much the same would follow if father and son married two sisters.

[2] Shakespeare, *Henry V.*, act iii. sc. v.

defaced with hereditary infirmaties, which by our lust and intemperance we had contracted. A sound generation of strong & able men were sent amongst vs, as those Northerne men vsually are, and innocuous, free from riot, and free from diseases. To qualifie vs, and make vs as those poore naked Indians are generally at this day; and these about *Brasile* (as a late Writer relates) in the Isle of *Maragnan*, free from all hereditary or other contagion, where as without help of Physicke they liue commonly 120 yeares, or more.'[1] Campanella also recommends crosses, for he says that in order to render marriages more fertile, and to prevent any infraction of the laws of the Church, Italians, Dutch, and Spaniards should intermarry. Yet he recommends this quite as much to consolidate the Spanish monarchy as for any other reason.[2] Bishop Jeremy Taylor compares marriage with a mother to a river returning to its source, or to the marriage of to-day with yesterday. Further, he says it is a contradiction of rights that anyone should be at once the superior and inferior of the same person; that there is a natural abhorrence of such mixtures; that brothers and sisters would not have a chance of choosing elsewhere, and would marry while yet too young; that if there were but one sister in a large family they might all fall in love with the same sister; or they might do the same if there were several sisters, and quarrel in consequence. Yet he ridicules those who, 'making the law of Nature to be a sanctuary of ignorance and an artifice to serve their end, just as the pretence of occult qualities is in Natural Philosophy,' would use it as a standpoint to forbid the intermarriage of first-cousins; and gives the following reasons 'why the Projectors of the Canon law did forbid to the fourth or to the seventh degree.' 'They that were for four gave this grave reason for it. There are four humors in the body of man to which because the four degrees of consanguinity doe answer,

[1] Burton, *Anatomy of Melancholy*, pp. 81, 82 (Pt. I. Sec. II. Subs. 6). Oxford, 1621. This last passage seems very hard on the doctors!

[2] Th. Campanella, *De Monarchia Hispanica*, 1640. Lib. xv.:—'Tum ne ecclesiæ nimis onerentur: et quo fœcundiores reddantur, Italæ cum Flandris aut Hispanis connubio jungantur. * * * At vero ut Hispani cum Italis et Flandricis mulieribus unam familiam constituant, perutile est Hispaniæ: sic enim mundus paulatim mores Hispanicos induet.'

it is proportionable to Nature to forbid the marriage of ose ns to the fourth degree. Nay, more ; there are four Elements ; Ergo. To which it may be added, that there are upon a man's hand four fingers and a thumb. The thumb is the *stirps*, or common Parent ; and to the end of the four fingers, that is, the four generations of Kinred we ought not to marry, because *the life of man is but a span long*. There are also four quarters of the world ; and indeed so there are of everything in it, if we please, and therefore abstain at least till the fourth degree be past. Others who are graver and wiser (particularly *Bonaventure*) observe cunningly, that besides the four humours of the body, there are three faculties of the Soul, which being joined together make seven, and they point out to us that men are to abstain till the seventh generation. These reasons such as they are, they therefore were content withall, because they had no better: yet upon the strength of these they were bold even against the sense of almost all mankind to forbid these degrees to marry.'[1] Almost the same reasons are advanced by Amyraut. He considers there is an innate horror of incest which he accounts for in this way: our horror of marriage with parents is due to our respect for them ; for since in a monarchy no one can be subject and monarch too, so no one can marry his mother and thus become monarch over her as her husband, and subject to her as her son ; while in our sisters we see the representative of our mother, therefore neither can we marry with them.[2] Dugard says that one argument he has heard against the marriage of cousins-german is that they 'do not thrive, and that God shews by the ill prospering of them that such Marriages are unlawfull, and by no means approv'd of by him.' One judgment 'which is said often to accompany these Marriages' is 'a Want of Children and a Barrenesse,' which he has 'taken notice of * * * not only from the Mouthes of some,' but has seen 'in print too, and that from no less a Man then the Pope.' They were also blamed for hindering

[1] Jeremy Taylor, *Duct. Dubit.*, book ii. chap. ii. rule iii. secs. 18, 19, 20, 27, 34, 66.

[2] Amyraut, *Considérations sur les Droits par lesquels la Nature a Reiglé les Mariages*, pp. 258 286.

the spread of relationship.[1] But if 'some' were of this opinion 'others' were certainly not. In a curious Dutch pamphlet published in 1668, and translated into English the same year,[2] a fictitious account is given of the discovery of a colony of English people, of some ten or twelve thousand, all descended from a man and four women, who were wrecked on 'a fourth island in Terra Australis Incognita.' The first gentleman is stated to have been the happy father of forty-seven children by his four wives, and these children marrying among themselves produced the population already mentioned within seventy-eight years from the landing of the original parents! Montesquieu places difference of age in the first rank of natural prohibited degrees. Were a man permitted to marry his mother, he says, she would be aged long before he would. Marriage between father and daughter he thinks forbidden, because it is the office of a father to bring up his daughter morally, and hence he has a natural abhorrence of corrupting her. The horror of incest in the collateral degrees he ascribes to the same source, for brothers and sisters are brought up in moral conduct at home; while uncles stand in the place of fathers. Even a teacher, or other persons living under the same roof, would for these reasons not like to intermarry.[3]

We should be led too far were we to enter into and discuss the many interesting questions connected with marriage and the development of relationships. What concerns us at present is merely to establish the fact that the prohibitions on marriages between near kin are not due to any innate horror of incest, or to any observation of evil results, or indeed from any desire to avoid marriages of this sort. But there are still two branches of the subject pertinent to our inquiry which may be briefly discussed; namely, the cause of the recognition of relationship through males, and the cause of endogamy.

We have seen that so long as there were no moderately

[1] Dugard, *The Marriages of Cousin Germans Vindicated*, pp. 30, 31, 36, 53, 97.

[2] Ontdeckinge van 't Eylandt van Pines, zijnde een waerachtige Beschryvinge van 't vierdte Eylandt in 't Zuyder onbekent Lant, zo van desselfs Vruchten, Dieren, Gelegentheyt, als mede de voort-teelinge de Engelse Natie, &c. op 't selve Eylandt.

[3] Montesquieu, *De l'Esprit des Lois*, book xxvi. chap. xiv.

permanent unions between single pairs of primitive people, so long the relationship of father must be unknown, or at most a matter of inference from the resemblance of the child to a possible father; but the mere fact that these inferences were made [1] is sufficient to show that savages do not ignore the share of the male parent in his offspring, even when they do ignore all relationship through males, and Mr. Morgan's tables of consanguinity show that, though primitive man modestly refused to hazard a guess as to the male parent, he was quite cognisant of male relationship, calling all possible fathers father, and all possible brothers brother. We see, then, male relationship recognised, great uncertainty as to fatherhood, and succession through women alone, the obvious deduction being that succession was through females only *because* the fatherhood was uncertain; which is confirmed by history and modern instances, as shown in the preceding pages. Should, however, fatherhood become certain, or moderately certain, it is obvious that succession through males must be recognised; on the other hand, it is equally certain that for long after relationship through males was recognised there was no assurance that the reputed father was the real father. Now, we have seen that children belonged to the community of the mother first; and secondarily to the mother's male relations; we have only, therefore, to suppose that when a woman became the captive of her husband, or his tribe, there would be an unwillingness to allow her progeny to belong to the mother's tribe; and since the father belonged to the victors' tribe the child might be adopted into it. That this was actually done is shown by Professor Robertson Smith; and, as he points out, it could not have been done at all, unless in most cases the putative father was actually the father, and in all cases the mother his property.[2] Mr. McLennan thought that in most cases this recognition came through group marriages, or polyandry, but even he saw that this was not always the

[1] Herodotus, *e.g.* says of the Machlyes: Μίξιν δὲ ἐπίκοινον τῶν γυναικῶν ποιέονται, οὔτε συνοικέοντες, κτηνηδόν τε μισγόμενοι. ἐπεὰν δὲ γυναικὶ τὸ παιδίον ἀδρὸν γένηται, συμφοιτέουσι ἐς τὠυτὸ οἱ ἄνδρες τρίτου μηνὸς, καὶ τῷ ἂν οἰκῇ τῶν ἀνδρῶν τὸ παιδίον, τούτου παῖς νομίζεται. iv. 180.

[2] Smith, *Kinship and Marriage*, etc. chap. iv. and p. 278.

case,[1] and recognised that when a woman became the property of her husband her progeny also became his.[2] From this followed property in children even when the wife was not a captive, but had been purchased by her husband. With the rise of the idea of succession through males, the part of the mother was lost sight of in proportion to her insignificance as a slave ; and hence, as Bachofen was the first to point out, arose the remarkable custom of the father lying-in when his children were born, known as 'faire la couvade.' 'The more striking the custom,' says Bachofen, 'the more must it be founded on some reasoning. The wider it is spread, the more evident that it cannot be due to caprice or chance.'[3] And the reasoning is shown in the story of Orestes, which will be discussed in the next chapter. So the Egyptians held that a child was indebted to its father alone for its existence, while the mother was little more than a nurse, according to Diodorus,[4] whose statement is remarkably confirmed by a painting in the tomb of Rameses VII., a monarch of the twentieth dynasty.[5] Mr. Tylor, indeed, objects to this explanation of the custom of the *couvade*, that the Arawacs of Surinam, although they practise it, reckon relationship solely through females ;[6] but this is most probably a transition state, where the father is beginning to be recognised, yet old ideas of relationship still prevail. When once the relationship through males is recognised, and women become personal property, the development to succession through males alone is a necessary consequence ; but the development is slow, and in few cases entirely obliterates old notions of the stronger relationship through women.

For the sake of greater clearness, I have drawn up in the accompanying table a sketch of the development of marriage law. In the first stage mankind is on a level with beasts, and no restrictions are recognised. In the second, while there is no restriction as regards the members of the community, a

[1] McLennan, *Primitive Marriage*, p. 174, note ; *Patriarchal Theory*, p. 231.
[2] McLennan, *Primitive Marriage*, 284. [3] Bachofen, *Das Mutterrecht*, p. 256.
[4] Wilkinson, *Ancient Egyptians*, 1st series, ii. 64, 65.
[5] That this idea is not impossible even to moderns, see Sterne's *Tristram Shandy*, 1819, i. 393. Boswell also had serious doubts on the subject ; see *Life of Johnson*, 1848, p. 472, note 3.
[6] Tylor, Review in the *Academy*, February 26, 1876, p. 199, on Hellwald's *Culturgeschichte*.

SKETCH PLAN OF THE DEVELOPMENT OF MARRIAGE LAW.

[NOTE.—The Arabic numerals are merely to assist in reference, and do not suggest any order of development.]

FIRST STAGE.

HETAIRISM, or Promiscuity.

SECOND STAGE.

(2) Individual wives by capture. Children belonging to the tribe.

(3) COMMUNAL HETAIRISM. Children belonging to the tribe.

THIRD STAGE. MATRIARCHAL

(4) Individual wives by capture. Children belong to the mother's kin.

(5) Individual property in females in the tribe of foreign blood. Children belong to mother's kin.

(6) BEENAH and MOTA, or temporary unions, generally exogamous, which continue only so long as the husband remains with his wife's tribe. Children belong to the mother's kin.

(7) COMMUNAL HETAIRISM, sometimes modified by temporary unions with totem restrictions, condoned by pre-nuptial or yearly hetairism, and afterwards expiatory rites. Children take the mother's totem.

(8) DEEGA, or purchase of a wife, who follows her husband, but does not belong to his tribe. Children belong to the mother's kin.

FOURTH STAGE. TRANSITION.

(14) THIBET POLYANDRY. One woman the wife of several brothers. Children allotted to the husbands in succession.

(13) TODA POLYANDRY. One set of brothers marry one set of sisters in common. Children belong to the family.

(12) COUVADE

(11) SADÎCA, or same as Deega, but the children belong to the husband's kin.

(10) JUS PRIMÆ NOCTIS.

(9) GOEL, or communal marriage, with a woman imported into the tribe. Children belong to the reputed husband.

FIFTH STAGE. PATRIARCHAL.

(15) POLYGAMY in which the husband has the right to his wife's sisters.

(16) BA'AL, a form the same as Goel, but the wife is no longer common to the tribe.

(17) LEVIRATE.

SIXTH STAGE.

(18) Marriage with anyone not within the prohibited degrees.

(19) ENDOGAMY, or marriage only with a person of the same ancestry not within the prohibited degrees.

SEVENTH STAGE.

(20) Modern law, which also recognises degrees of affinity.

(21) Incest among noble relatives.

[*To face page* 33.]

certain right of property is recognised in the captor of a foreign woman, but all children are children of the community. In the third stage the former systems of relationship continue, but the children of foreign women are considered as quasi-foreigners, and a sort of individual property is recognised when the ceremony of capture has been gone through ; but no individual property is recognised in women of the same female descent as the would-be owner. Hence gradually restriction as to marriages between persons of the same kin on the female side, or of the some *totem*. From this idea of property implied in the individual possession of a wife the custom naturally develops of the purchase of wives, either with or without the right to own their children. The early promiscuosity dies out, since relatives sell their female relations, and men prefer to have slave-wives. Then relationship through males begins to be recognised ; and at last we arrive at the comparatively civilised ideas of true marriage. Only when the old ideas of common property in the women of the tribe have died out can individual marriages with women of the tribe take place, often only after expiatory rites, and the idea of stronger relationship through females crops up again in the superior right of a relative to the hand of his female relations, especially when the community considers itself superior to neighbouring communities. When individual families begin to be recognised, pride of race is a natural consequence ; and when surrounding communities are inferior, that pride will forbid intermarriage ; hence we get what Mr. McLennan called Endogamy.

Endogamy is founded entirely on pride of blood, and prevailed always, as it still prevails, where a superior race, or even a superior family, is in the neighbourhood of inferiors. Did we argue like those who assert that exogamy was invented to avoid consanguineous marriage, by parity of reasoning we have a right to say that exogamy was found by every race to be only fit for savages, and that no civilised race could be formed without a law prohibiting marriage with foreigners. On examination of the customs of various people we find that this is universally the case with every civilisation of anti-

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quity, as it still is, with scarcely an exception, out of Europe. With noble or royal families this is carried further, and not only is marriage outside the nation or tribe forbidden, but it is forbidden with any but the nearest kin. Apparently also the results would justify the contention that marriage with kin was enjoined because it was found to be beneficial, seeing that half-breeds (as I shall show in a later chapter) are nearly always inferior to either parent, that those nations who were endogamous were invariably superior to their neighbours, and that those families who prided themselves most on their blood were superior to others. In Fiji the chiefs who marry their relations are a much finer set of men than the common people who do not. The Persians, the Egyptians, the Greeks, the Romans, the Astecs, the Peruvians, and the Indians were all endogamous, sometimes incestuous, and always superior to their neighbours. But, as a matter of fact, the only reason in all these cases was pride of race, and the prohibition of foreign marriages was only useful so long as their civilisation was ahead of that of their neighbours, after which it must become a hindrance to progress. For the same reason a neighbouring nation or a tribe of low degree might be compelled to be endogamous, because its neighbours disdained to intermarry ; such is the case with many Indian castes. We never see endogamy practised excepting in cases of pride of blood or of isolation ; and those who practise it, themselves explain the cause as an endeavour to avoid the contamination of ignoble blood.

In the next chapter I propose to apply these principles and show that the prohibited degrees are in conformity with them, so far as they can be traced in actual practice and in history, and are not otherwise explicable.

CHAPTER II.

THE RESTRICTIONS UPON MARRIAGE IN HISTORY AND IN SAVAGE COMMUNITIES.

THE most ancient community of which we have any record (with the possible exception of the early Assyrian) is the ancient Egyptian ; nor have we any direct information concerning their marriage law before a comparatively recent period, and can only infer from their later customs, and from the general law of development of marriage prohibitions, that they passed through the phases marked in the table before they reached the earliest recorded stage, namely, the fifth. They were divided into castes, within which it was proper to marry ;[1] and not only the royal line, but the meanest of the common people married their sisters, as among the ancient Peruvians. Beyond the legend of Isis and Osiris and some confirmation from the monuments, however, we have no direct proof of this of earlier date than the Ptolemaic period.[2] Thus in the story of Satni-Khamoïs, translated by M. Maspero from a papyrus, one parent says to the other, 'Ahuri, our daughter, loves her brother Noferkephtah ; let us marry them together, as is the custom ;'[3] and no such custom could ever arise anew among the common people, exclusive of the royal line, if it had ever been forbidden. Diodorus, again, who, although he wrote in the late Ptolemaic period, in all probability had access to reliable information, mentions it as customary.[4] Philo Judæus, who was born in Alexandria, says that the law of

[1] Wilkinson, *Ancient Egyptians*, first series, i. 239, 245.
[2] *Ibid.* ii. 63.
[3] Maspero, *Contes Populaires de l'Égypte Ancienne*, p. 52.
[4] Diodorus, i. 27.

Egypt permitted marriage with sisters without any restriction as to blood or as to relative age.[1] We have, further, a practical proof in the history of the Ptolemys: for so politic and conciliating a king as Ptolemy Soter, the first of a new dynasty of stranger kings, with a by no means undisputed title, and in a nation peculiarly intolerant of foreigners and of foreign customs, would hardly have dared to marry his daughter Arsinoë to her uterine brother Philadelphus; nor would Philadelphus have been able to deprive his elder brothers of the kingdom, or have been so powerful and popular, if his marriage had in any way shocked the ideas of his Egyptian subjects as to what was right and proper.

It is impossible to give an idea of the extent to which the Ptolemys practised incest without a genealogical table, for the more unions of that kind there are, the more difficult is it to follow such complicated relationships. In the annexed table it will be seen how they habitually married their sisters, their nieces, their cousins; indeed, in all degrees excepting those of the direct ascending and descending line. And with what result? Niebuhr assures us that a visible curse rested on the dynasty of the Ptolemys,[2] a conclusion he seems to have come to from that preconceived notion which so many people have; for he tells us that several physiologists assert that such marriages lead to scrofula, idiocy, etc., and that their evil results are clearly seen in those villages where the peasantry intermarry among themselves.[3] This assumption I have considered below; but that the Ptolemys were under a manifest curse is most certainly an unwarrantable assertion. In their genealogical table it may be seen that they were neither sterile[4] nor particularly short-lived. That they were

[1] Cited by Adam, *Fortnightly Review*, 1865, ii. 714.
[2] Niebuhr, *Vorträge über alte Gesch.* iii. 570.
[3] *Ibid.*
[4] Mr. Galton, in his *Hereditary Genius*, p. 152, says: 'The result of Ptolemaic experience was distinctly to show that intermarriages are followed by sterility.' He seems to base this assumption on the fact that the last queen, Cleopatra, was only an illegitimate descendant of Ptolemy I. The following table will show the facts more clearly. By this table it will be seen that the Ptolemys had as many children when they married their nearest relatives as when they married strangers. It is true that apparently they had few children, but we must bear in mind that

PTOLEMY
B.C. 323—285. H
Philip of Macedon
whom he afterwar
Lagus. Ptolemy a
younger son Ptolem

PHILIP
Amyntas, the
an, and first
of Berenice.

[Ptolemy I. offered his hand to, and was accepted by, Cleopatra, the daughter of Philip of Macedon; and if his reported parentage is true, his half-sister. She was killed by the jealous Antigonus before his marriage could take place. She had been previously married to her paternal uncle.]

PTOLEMY, or C
Unjustly deprived
dom for his young
Ptolemy *Philadelph*
ried his half-siste
but was put to deat
by the Gauls.

= LYSIMACHUS (1) [= NICÆA.
Married first Nicæa, then Amastris, afterwards Arsinoë (1). [= AMASTRIS.

[= ARSINOË (2) = MAGAS (1)
First married Ptolemy II., *Philadelphus*, and then, as Niebuhr conjectures, Magas; and if this is correct, afterwards Demetrius, son of Ptolemaïs, and the betrothed of Berenice (2).
Son of Berenice (1) and Philip. Hence uncle by marriage of his wife Arsinoë (2). He died suffocated by his own fat.

Fall of the Roman Empire, i. 286, note. London, 1838.

Ptolemy I., or *Soter*
B.C. 323—285. He was probably a son of Philip of Macedon by Arsinoë, a relative, whom he afterwards gave in marriage to Lagus. Ptolemy abdicated in favour of his younger son Ptolemy *Philadelphus*. d. 283.

= Artacama
A Persian princess. She had no children.

= Eurydice
Second wife of Ptolemy I., *Soter*, and daughter of Antipater

= Berenice (1)
Third wife of Ptolemy I., *Soter*, and daughter of Antigone and Lagus, the reputed father of her husband.

[= Philip
Son of Amyntas, the Macedonian, and first husband of Berenice.

[Ptolemy I. offered his hand to, and was accepted by, Cleopatra, the daughter of Philip of Macedon; and if his reported parentage is true, his half-sister. She was killed by the jealous Antigonus before his marriage could take place. She had been previously married to her paternal uncle.]

Ptolemy, or *Ceraunus*
Unjustly deprived of his kingdom for his younger brother, Ptolemy *Philadelphus*. He married his half-sister Arsinoë (1), but was put to death soon after by the Gauls.

Meleager
Also deprived of his right by his younger brother.

Another son

Lysandra
Married first Alexander, son of Cassander, King of Macedon; and after his death, Agathokles, a son of Lysimachus (1).

Ptolemais
Fourth wife of Demetrius, by whom she had a son Demetrius.

Ptolemy II., or *Philadelphus*
B.C. 309. Reigned 285—247. First married his niece-in-law, Arsinoë (2), by whom he had three sons and a daughter. By his later marriage with his whole-sister Arsinoë he had no children.

= Arsinoë (1)
First married her brother Ptolemy II., after a passing marriage with her half-brother Ptolemy *Ceraunus*.

= Lysimachus (1)
Married first Nicæa, then Amastris, afterwards Arsinoë (1).

[= Nicæa.

[= Amastris.

[= Arsinoë (2)
First married Ptolemy II., *Philadelphus*, and then, as Nieburh conjectures, Magas; and if this is correct, afterwards Demetrius, son of Ptolemais, and the betrothed of Berenice (2)

= Magas (1)
Son of Berenice (1) and Philip. Hence uncle by marriage of his wife Arsinoë (2). He died suffocated by his own fat.

Laodice (1)
Daughter of Achæus

= Antiochus II.
King of Syria. First married Laodice, and then Berenice (3).

= Berenice (3)
Second wife of Antiochus II. She was murdered by his former wife Laodice.

Lysimachus
Survived Ptolemy III., but was murdered by Ptolemy IV.

Ptolemy III.
or *Euergetes*.
Reigned B.C. 247—222. His reign was brilliant, and his conquests were great. He was uterine brother to his wife Berenice (2).

= Berenice (2)
Grand-daughter of Berenice (1). Cousin and sister to her husband Ptolemy III. Married about B.C. 247. Survived her husband, but was murdered by her son Ptolemy IV., or *Philopator*.

Mithridates IV.
King of Pontus

= Stratonice

Antiochus
Heirax

Seleucus II.
Callinicus

= Laodice (2)
probably his first-cousin.

One child killed by Laodice.

Ptolemy IV., or *Philopator*
Reigned B.C. 222—205. He gave himself up to every vice and debauchery, thus shortening his life.

= Arsinoë (3)
Afterwards put to death by her husband and brother, Ptolemy IV., *Philopator*.

Berenice
died.

Magas (2)
Murdered by his brother Ptolemy IV.

Laodice (3)

= Antiochus III.
King of Syria

Seleucus III.
Ceraunus

Antiochus
1st husband.

= Laodice (4)
Married her brothers.

= Seleucus IV.
2nd husband.

And others

Cleopatra (1)
Married B.C. 193. Survived her husband, and acted as regent for her son till her death, B.C. 173.

= Ptolemy V., or *Epiphanes*
He was a child four or five years old at his father's death, and his reign lasted from B.C. 205 to 181, when he was poisoned at the age of 29.

Demetrius I.
or *Soter*

Ptolemy VI., or *Philometor*
A mere child at the death of his father. He reigned B.C. 181—146, and was mild, wise, and humane. A part of his reign was in conjunction with his brother.

= Cleopatra (2)
Married first her brother *Philometor*, and after his death her other brother *Physcon*, but was soon divorced.

= Ptolemy VII., or *Physcon*
Married first his sister and brother's widow, Cleopatra (2), and then his niece Cleopatra (4), the daughter of his brother and his sister. He was bloated and unwieldy. Reigned alone B.C. 146—117.

Alex. Balas
1st husband.

= Demetrius II.
or *Nicator*
2nd husband.

= Antiochus VII.
3rd husband.

Cleopatra (3)
Thrice married. First to Alex. Balas; second to Demetrius; third to Antiochus VII. She was poisoned.

One son
died young.

Ptolemy, or *Eupator*
Murdered by his uncle Ptolemy VII., *Physcon*.

Ptolemy
Lived with Demetrius II.

Cleopatra (4)
An ambitious and clever woman. Married her uncle Ptolemy VII., *Physcon*. She was assassinated B.C. 89.

Memphitis
Murdered by his father. Ptolemy VII., *Physcon*.

Seleucus V.
Murdered by his mother Cleopatra (3).

Antiochus VIII.
Married his first-cousin Tryphæna (4), daughter of Ptolemy *Physcon*, and his niece.

Antiochus IX.
Married his first-cousin Cleopatra (5), former wife of her brother Ptolemy VIII.

= Cleopatra (5)
First married her brother Ptolemy VIII., then her first-cousin Antiochus IX. Murdered by her sister Tryphæna.

Ptolemy VIII., or *Soter II.*
Called *Lathyrus* also. The son of Ptolemy *Physcon*, by his niece. He was of full age on his father's death, and reigned B.C. 117—81. He first married his sister Cleopatra (5), but was compelled to abandon her by his mother, though he loved her tenderly, and marry his other sister Selene. He was mild, even too mild, but free from vice. Besides his daughter Berenice by Cleopatra (5), he had two illegitimate sons.

= Selene
Second wife of Ptolemy VIII. Then wife of her nephew, Antiochus XI., and then her other nephew, Antiochus X.

Tryphæna (1)
Married her first-cousin Antiochus VIII., king of Syria. She was killed by Antiochus IX., to revenge the murder of his wife, her sister.

Ptolemy IX., or *Alexander*
Youngest son of Physcon by his niece Cleopatra (4). He took for his second wife Berenice (4), his niece, by whom he had no children. He was killed in battle.

2 children

Antiochus XI.
Married his aunt Selene, the former wife of Ptolemy VIII., his uncle.

Antiochus X.
Married his aunt Selene, the former wife of his cousin Antiochus XI. and of Ptolemy VIII., his uncle.

Ptolemy XI., or *Auletes*
Illegitimate son of Ptolemy VIII., Reigned B.C. 80—58. Was dethroned, but reigned again B.C. 55—51. A man devoted to vice and debauchery.

= Berenice (4)
Married her uncle Ptolemy IX., or *Alexander*. She had no children by him, but was left queen by his death. After a short reign she married her former husband's son, Ptolemy X., who murdered her nineteen days after marriage.

= Ptolemy X.
or, *Alexander II.*
Married his first-cousin and father's widow, Berenice (4), to get the kingdom, and then murdered her. He was killed by the populace for this act, B.C. 80.

A Daughter

Ptolemy XII.
Reigned B.C. 51—48, in conjunction with his sister and nominal wife Cleopatra (6), during which time he was mostly fighting against her. He was drowned.

= Cleopatra (6)
Ruled Egypt, first in conjunction with her brother and nominal husband, Ptolemy XII., and after his death with her other brother, Ptolemy XIII., who was much her junior. He was her husband after her brother's death till poisoned by her. Cleopatra was born B.C. 69, and committed suicide B.C. 30, when aged 38. She was ambitious, beautiful, clever, learned, and witty.

= Ptolemy XIII.
The younger brother, and second husband of Cleopatra (6). He was made king after his brother's death, in conjunction with his sister. She took him to Rome, B.C. 45, and poisoned him in the same year.

Tryphæna (2)
Died before her father.

Arsinoë (4)
Was murdered by her elder sister, Cleopatra (6).

Berenice (4)
Was put on the throne when her father was expelled, and consequently murdered on his return.
= Her second cousin Seleucus, but she disliked him so much that she had him put to death.
= 2nd Archelaus.

= Archelaus
Son of Mithridates, King of Pontus.

(To face page 56.)

not more subject to disease than would be expected from their luxurious habits, or stupider than the generality of people, we gather from history: nay, some of them were singularly sharp-witted; Cleopatra, the daughter of a brother and sister, great-grand-daughter of another brother and sister, and a great-great-grand-daughter of Berenice, who was both cousin and sister to her husband, might with advantage compare in astuteness to Catherine de Medicis of France. While as for that hardness of heart and utter carelessness of human life on which Niebuhr lays so much stress, as a clear manifestation of the curse under which they laboured, it was not peculiar to the Ptolemys, nor even to other barbarous civilisations of that time, but may be seen in the history of any despotism that has ever been written. No one will deny

their fertility cannot be compared to the present fertility of Europe; they had hareems like other Eastern nations, and we should compare their fertility therefore to that of other great Eastern potentates. There were besides many other

Name.	Relationship to		No. of Children by First Wife.	No. of Children by Second.
	First Wife.	Second Wife.		
Ptolemy II.	No blood relative.	Sister.	4	0
,, III.	Cousin and sister.	——	4	—
,, IV.	Sister.	——	1	—
,, V.	Scarcely connected.	——	3	—
,, VI.	Sister.	——	5	—
,, VII.	Sister.	Niece, the daughter of his sister *and* his brother.	1	5
,, VIII.	Sister.	Sister.	1	2
,, IX.	?	Niece, the daughter of a brother and sister.	2	0
,, X.	First-cousin.	——	0	—

causes for their apparent sterility; thus the sister of Ptolemy II. had only one child by her former husband, who was no relation to her, and she was besides much her brother's elder; the wife of Ptolemy IV. was murdered; Ptolemy VII. divorced his first wife soon after marriage; Ptolemy VIII. also soon divorced his first wife, and he was forced to abandon his second; Ptolemy IX. was killed in battle; while Ptolemy X. murdered his wife nineteen days after marriage. It is hardly to be expected, when we consider all these little circumstances, that they should have had many children. Though the Cæsars did not usually marry relatives we may note that their unions were even more infertile than those of the Ptolemys: 'There had been no example of three successive generations on the throne,' says Gibbon; 'the marriages of the Cæsars (notwithstanding the permission and the frequent practice of divorces) were generally unfruitful' (*Decline and Fall of the Roman Empire*, i. 286, note. London, 1838.)

It is true that apparently they had few children, but we must bear in mind that

not more subject to disease than would be expected from their luxurious habits, or stupider than the generality of people, we gather from history: nay, some of them were singularly sharp-witted; Cleopatra, the daughter of a brother and sister, great-grand-daughter of another brother and sister, and a great-great-grand-daughter of Berenice, who was both cousin and sister to her husband, might with advantage compare in astuteness to Catherine de Medicis of France. While as for that hardness of heart and utter carelessness of human life on which Niebuhr lays so much stress, as a clear manifestation of the curse under which they laboured, it was not peculiar to the Ptolemys, nor even to other barbarous civilisations of that time, but may be seen in the history of any despotism that has ever been written. No one will deny

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,, V.	Scarcely connected.	——	3	—
,, VI.	Sister.	——	5	—
,, VII.	Sister.	Niece, the daughter of his sister *and* his brother.	1	5
,, VIII.	Sister.	Sister.	1	2
,, IX.	?	Niece, the daughter of a brother and sister.	2	0
,, X.	First-cousin.	——	0	—

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that the Egyptians decayed in wealth and power almost from the accession of the Ptolemys ; but the theory is untenable that this was due to their consanguineous marriages. When we consider that they did not introduce this custom, but followed it, and that it must have been customary for centuries before, we see at once how absurd such a theory must be.[1] The Egyptians began to decline when they ceased to be that exclusive people they formerly had been ;[2] not probably from the admixture of fresh blood, of which there could be but little, but rather from the increase of vice and the general decay which always accompanies disregard of the marriage tie. For when Plato visited them not long before their conquest by Alexander, although they had been open to Greek intercourse for centuries, he was greatly struck by their strong conservatism,[3] a conservatism which was lost in its most important part under the vicious example of their foreign conquerors, spoiled as they were by Asiatic luxury.

The earliest glimpse afforded to us of the relations between the sexes among the ancient Greeks is from Homer. Here the late Mr. McLennan is successful in showing how traces linger of the time when, though the wife followed the husband, her children still belonged to her tribe, and were not related to their father. Thus Lykaon begs Achilles to spare his life :—

——'since not from the same womb
Am I as Hector is, who killed thy friend,'

although Priam was the father of both.[4] But that there is some relationship through the father is shown by Achilles' reply that every Trojan shall die, and

'The offspring, most of all, of Priam's race.'[5]

In the legend of Meleager, his *maternal* uncles disputed his right to give away the spoil of the boar to anyone but themselves.[6] Mr. McLennan also gives a few more instances of

[1] Wilkinson, *Ancient Egyptians*, first series, ii. 63.
[2] Sharpe, *History of Egypt*, i. 224. [3] *Ibid.* i. 231.
[4] McLennan, *Fortnightly Review*, 1866, p. 572.
[5] Πέρι δ' αὖ, Πριάμοιό γε παίδων. *Iliad*, xxi. 105.
[6] McLennan, *ut sup.* p. 587.

the superiority of relationship through the mother. Thus, Laothoë, mother of Lykaon, the daughter of Altes, king of the Leleges, evidently still belonged to her father's kin, as well as her child, because Priam refers to her power to ransom her son through her father's riches ;[1] but Helen, as a captive wife, stood on a different footing : she was the property of her captors, and, as such, her husband's brothers, after Paris was slain, disputed her hand as his heirs.

This state of civilisation was therefore a transition state, when male kinship was beginning to be recognised ; but the prohibited degrees were still undefined. In the wanderings of Ulysses he relates ;—[2]

> 'At the floating isle Æolia we landed,
> Where Æolus the son of Hippotas
> Beloved of the immortal gods commanded.
> His house was walled about with brass.
> Th' ascent unto it was all one smooth stone.
> Twelve were his children, six sons and six daughters ;
> In wedlock he had joined them one to one.'

Nor does it seem quite clear that Homer reprobates Œdipus so much for marrying his mother as for killing his father :

> 'Mother of Œdipus, Jocasta bright,
> Who blindly did a horrid act by fate ;
> Not knowing him, she married her own son ;
> Not knowing him, he his own father slew.'[3]

Alkinous and Arete, again, are uncle and niece ; but, since she was the daughter of Alkinous' brother Roxenor, she would not be related to him if no relationship were recognised through males.[4] Oceanus is made to marry his sister ; and, if we are to believe that from this union sprang three thousand rivers, as many Oceanides, and a sprinkling of daughters, the marriage cannot be considered as unfruitful ; or, what is the important point to mark, the ancient Greeks had no idea that such marriages might be unfruitful. Hyperion, a brother of Oceanus, also married his sister, and like-

[1] McLennan, *ut sup.* p. 573.
[2] Homer, *Odyssey*, book x. 1-7.
[3] *Ibid.* xi. 270.
[4] *Ibid.* vii. 53 68.

wise had a very numerous family; and here the lady is described as own sister.[1] Homer and Hesiod both make Zeus the brother of his wife Hera, the offspring of Heaven and Earth. Iphidamus, too, is described as marrying his mother's father's daughter, probably by another wife, who, therefore, would be considered to be no relation to him.[2] Mr. Morgan thinks that we have direct evidence in Plato of tradition of those times when there was communal hetairism[3] and all children were common to the tribe, and that this tradition of the good old times induced him to recommend a similar condition for his ideal republic.[4]

The Athenians attributed the transition from female to male kinship to the time of Kekrops, as a punishment to the women for having outvoted the men in the dispute between Poseidon and Athenæ;[5] but there is no doubt that relationship was not agnatic at a very much later period than this legend supposes. Thus Mnesiptolema, the daughter of Themistokles' second wife, was married to her half-brother Archeptolis. Kimon, also, married his half-sister Elpinike because she was too poor to obtain a husband suitable to her birth; after which Kallias, a rich Athenian, fell in love with and married her, while Kimon married Isodike. Nepos says such marriages were both customary and lawful.[6] Marriage with a uterine sister was not lawful, however,

[1] Homer, *Hymns*, Εἰς Ἥλιον, 4, 5 :—

Γῆμε γὰρ Εὐρυφάεσσαν ἀγακλειτὴν Ὑπερίωνος,
Αὐτοκασιγνήτην, ἣ οἱ τέκε κάλλιμα τέκνα.

[2] Homer, *Iliad*, xi. 221-226 :—

Ἰφιδάμας Ἀντηνορίδης, ἠΰς τε, μέγας τε,
ὃς τράφη ἐν Θρήκῃ ἐριβώλακι, μητέρι μήλων·
Κισσῆς τόν γ' ἔθρεψε δόμοις ἔνι τυτθὸν ἐόντα
μητροπάτωρ, ὃς τίκτε Θεανὼ καλλιπάρῃον.
αὐτὰρ ἐπεί ῥ' ἥβης ἐρικυδέος ἵκετο μέτρον,
αὐτοῦ μιν κατέρυκε, δίδου δ' ὅγε θυγατέρα ἣν.

[3] No. 3 in the table, p. 33.

[4] Plato, *Timæus*. Morgan, *Ancient Society*, p. 417.

[5] Varro, quoted by St. Augustine, *De Civitate Dei*, viii. 9. Cited by Bachofen, *Das Mutterrecht*, p. 41.

[6] Nepos, *Præf.* and *Kimon*, chap. i. It is true that Athenæus says: Κίμωνος δ' Ἐλπινίκῃ τῇ ἀδελφῇ παρανόμως συνόντος, εἶθ' ὕστερον ἐκδόθείσης Καλλίᾳ καὶ φυγαδευθέντος, μισθὸν ἔλαβε τῆς καθόδου αὐτοῦ ὁ Περικλῆς τὸ τῇ Ἐλπινίκῃ μιχθῆναι (book xiii.) And Andokides tells us he was ostracised for this: Οἵτινες ἐξωστράκισαν Κίμωνα διὰ παρανομίαν ὅτι τῇ ἀδελφῇ τῇ ἑαυτοῦ συνώκησε (*In Orat.*

neither was marriage in the direct ascending or descending line.[1] Hence we see that at the time Solon made his laws, relationship on the male side was still slight, but beginning to be recognised. Bachofen was the first to point out that we have clear literary evidence of this change of opinion about fifty years after Solon in the 'Eumenides' of Æschylus. The Erinnyes were the avengers of crimes committed within the kin, or group of the same blood, and they figure in this play as the accusers of Orestes before the gods for the murder of his mother. 'I slew her,' replies Orestes; 'of this there is no denial; * * * she slew her husband, my father.' 'Why,' continues Orestes, 'did you not punish her for that deed and relieve me of the necessity?' 'She was not the kindred of the man she slew,' answer the Erinnyes. 'But,' argues Orestes, 'am *I* allied by blood to my mother?' 'Yes,' say the Erinnyes, 'for did she not nourish you within her zone?' 'No,' says Apollo, 'she is not the genitrix, who is called the bringer-forth of the child,[2] but nurse to the newly sown offspring. The male is the producer, and she like a stranger preserves the plant for a stranger.' 'I give my vote for Orestes,' says Athenæ, 'for no mother produced me.' The votes are counted and found equal, and hence Orestes is saved; but the Erinnyes lament that the 'youthful gods' have overridden the 'ancient laws.' They will curse the land in the way that they, as the daughters of Mother Earth, have peculiarly the power; children and vegetation shall be blighted. 'You are older, and wiser than I,' says

contra Alkibiadem.) But Demosthenes says that Kimon was punished because he tried to usurp the government (*Advers. Aristocrat.*); and, as Bayle points out (*Dict.* '*Cimon*'), Athenæus does not say that Kimon was banished *because* he married his sister. Plutarch says he was banished because the people were piqued at an insult the Athenian troops had received from the Lacedæmonians, with whom Kimon was supposed to have close relations. Andokides is the earliest author (*circa* B.C. 390) who attacked Kimon's reputation on the score that this act was παράνομος. He wrote about a hundred years after, and was then merely attempting to show, without very much regard for truth, that in the good old times all offences against morality were severely punished. He even accused Alkibiades of incest with his mother, daughter, and sister (book v. chap. xx.) Athenæus was a gossip who wrote more than a hundred years after Andokides.

[1] Xenophon, *Memorabilia*, book iv. chap. iv. 20. Οὐκοῦν καὶ γονέας τιμᾶν πανταχοῦ νομίζεται; Καὶ τοῦτο, ἔφη. Οὐκοῦν καὶ μήτε γονέας παισὶ μίγνυσθαι μήτε παῖδας γονεῦσιν.

[2] Οὐκ ἔστι μήτηρ ἡ κεκλημένου τέκνου τοκεύς.

Athenæ; 'but to me also Zeus has given no small share of wisdom.' She assures them that they have not been dishonoured; that in future, despite the change in the ancient laws, they will continue to be held in honour, and finally succeeds in soothing them.

This may have represented the opinion at the time of Æschylus, and according to Euripides it did.[1] The idea was common to several peoples, as we shall see below; and Sir H. Maine points out that Hippokrates 'in energetically combating this opinion, and contending that the child descended from both parents, seems to admit that it was a prevalent heresy.'[2] But it could not have lasted very long, for scarcely a hundred years later Aristotle makes no mention of it, and talks of children resembling sometimes one parent and sometimes the other. In the tenth book, falsely attributed to him indeed, but probably dating from about the same period, both parents are clearly stated to have an equal share in the offspring.[3]

McLennan cites the celebrated suit about the succession of Hagnia, the property being first claimed by his mother, as the sister of his cousin; and when that claim was disallowed, as the mother of Hagnia. But on that ground she also failed, because, as Isæus states, the mother had no affinity carrying legal rights. Now, Solon had already altered the law which forbade a man to leave his property away from his relations, and permitted property to be left as the testator pleased, so long as there were no legitimate *sons*.[4] Athenæ, also, gives as her reason for siding with Orestes that she considers the male to be the lord of the house.[5] It is plain, therefore, that the law of relationship as regards property had changed from a fundamental change in the theory of relationship; but it is equally plain that the conservative tendency always observable as regards marriage had hindered the development of this idea in the law of the prohibited

[1] *Stobæi Florilegium*, Oxon. 1823, iii. 111 (p. 455, lxxvii.) Cited by Sir H. Maine.
[2] Maine, *Dissertation on Early Law*, 1883, p. 203.
[3] Aristotle, book vii. chap. vi. 4, 5; book x. chaps. v. vi.
[4] Plutarch, *Solon*.
[5] Æschylus, *Eumenides*.

degrees. Thus, the Hetairæ were not regarded as practising a dishonourable profession, while respectable women were treated as inferior beings; a remainder from the time when married women were captive strangers; the Hetairæ were kith and kin.[1] Though marriage in the direct line was forbidden, we have seen that marriage with a non-uterine sister was permitted; a remainder from the time when there was no relationship through males. But where property was in question the old law was forgotten. Before Solon, even, a man could sell his sister or daughter; a power which Solon limited to cases where she had dishonoured her family.[2] An heiress was bound to marry her nearest relation in the time of Isæus; and even when she was married, if another claimant appeared with a better title, her husband was obliged to give her up. If a man left a portionless daughter her nearest relative was bound to marry her, or to give her a suitable portion.[3] At first sight the Iketides of Æschylus seems rather difficult to reconcile with this. The daughters of Danaus are fleeing from their first-cousins, the sons of Ægyptus; they hate the proposed impious nuptials, as they call them.[4] Let them perish before they consummate this marriage forbidden by the law.[5] 'Why will you not marry them?' inquires the Argive king to whom they appeal for refuge. 'That we may not become the handmaidens of the race of Ægyptus.' 'Do you mean that you dislike them, or that such a marriage is unlawful? Who would reject their kindred as their lords?'[6] A reply far from clear, since the king continues: 'If the sons of Ægyptus have power over you by the law of your state, saying that they are nearest of kin, who would wish to oppose them? You must therefore prove that according to the laws of your home they have no authority over you.' The daughters of Danaus do not,

[1] Sir J. Lubbock, *Origin of Civilisation*, p. 127. [2] Plutarch, *Solon*.
[3] Smith, *Dictionary of Greek and Roman Antiquities*, art. 'Epiclerus.'
[4] Ἀλλ' αὐτογενῆ τὸν φυξάνορα γάμον Αἰγύπτου πα δων ἀσεβῆ τ' ὀνοταζόμεναι.
[5] Πρ᾽ν ποτε λέκτρων, ὧν θέμις εἴργει, σφετεριξάμενον πατραδελφ᾽αν τήνδ' ἀεκόντων, ἐπιβῆναι.
[6] Πότερα κατ' ἔχθραν, ἢ τὸ μὴ θέμις λέγεις; Τίς δ' ἂν φίλους ὄνοιτο τοὺς κεκτημένους.

however, do so ; indeed the play is one of the most imperfect that has come down to us, and was perhaps originally somewhat clearer. But the key seems to be the unwillingness of the maidens to marry their brethren ; they have not got the law on their side ; no law would reject kindred as the natural husbands, but they are unwilling to become the handmaidens of these men. During their father's lifetime he has the disposal of their hands. 'How can a bird that devours a bird be pure? and how could he who marries an unwilling maid from an unwilling father be undefiled? It seems to be another case of the transition from the law previous to Solon and the law after him. Terence's play of 'Phormio' hinges entirely on the right kinsmen have to heiresses.[1]

The same law was common to Sparta. Thus Leonidas married Gorgo, the heiress of Kleomenes, his half-brother, as he was her nearest relative ; and Anaxandrides, the father of Leonidas and Kleomines, married his own sister's daughter. Should a father fail to decide on whom he would bestow his daughter's hand, the king decided who among the kinsmen should be the lucky man.[2]

The Greeks were essentially an endogamous race, as were most ancient civilisations surrounded by barbarians.[3] The Greek colonies owe their existence even to the law that the children of a mixed marriage had no right of citizenship ; these were forced to emigrate, for they were no true sons of Hellas. Athenian law prohibited, under very severe penalties,

[1] 'Lex est, ut orbæ, qui sunt genere proxumi,
Eis nubant : et illos ducere eadem hæc lex jubet.
Ego te cognatum dicam, et tibi scribam dicam :
Paternum amicum me adsimulabo virginis :
Ad judices veniemus : qui fuerit pater,
Quæ mater, qui cognata tibi sit ; omnia hæc
Confingam : quod erit mihi bonum atque commodum,
Cum tu horum nihil refelles, vincam scilicet.'

Phormio, Act i. sc. ii.

And again in the *Adelphi* :

'Hæc virgo orba est patre :
Hic meus amicus illi genere est proxumus :
Huic leges cogunt nubere hanc.'

Adelphi, Act iv. sc v.

[2] Smith's *Dictionary of Antiquities*, art. 'Matrimonium.'

[3] In Persia a marriage was not considered legitimate unless both of the contracting parties were Persians. Hence the surname *Nothus*, which some of the Persian kings bore. —Niebuhr, *Alte Geschichte*, ii. 219.

the marriage of a citizen with a foreigner.[1] 'No Spartan,' says Grote, 'could go abroad without leave, nor were strangers permitted to stay at Sparta; they came thither, it seems, by a sort of sufferance, but the uncourteous process called xenêlasy was always available to remove them, nor could there arise in Sparta that class of resident metics or aliens who constituted a large part of the population of Athens, and seem to have been found in most other Grecian towns.'[2] The old law which forbade a Herakleid to marry a foreigner was revived by Lysander to turn out Leonidas II., who had married an Asiatic wife. In the same way Themistokles was not a citizen because his mother was a foreign woman; and it was a charge of Æschines in his attack on Demosthenes, the orator, that his was no true Greek descent.[3] Perikles himself was no real citizen, because his parents were not both Greeks; but the son of Perikles by his Greek wife was a true Athenian citizen. The numerous class of aliens which thus arose in nearly every Grecian town formed a real danger; for they could not be expected to remain content without that franchise which the lowest man of the populace possessed. They had, therefore, every now and then to be driven forth, with directions to found a colony, by which expedient they remained loyal to the mother country while they extended her power.[4]

According to Philo, the Spartans were allowed to marry a sister-uterine, but not a sister-german. But this, observes Mr. McLennan, is probably untrue, and is discordant with the habits of the Lacedæmonians.[5] A Spartan husband was forbidden the luxury of jealousy; husband and wife were brought together utterly regardless of likes or dislikes; and those were married together who were the finest physically.[6] Xenophon asserts that mother and daughter were sometimes married to the same individual;[7] but Grote says that though

[1] Art. 'Matrimonium' in Smith's *Dictionary of Antiquities*, etc.
[2] Grote, *History of Greece*, ii. 515.
[3] Arts. 'Leonidas II.' and 'Themistocles,' in Smith's *Dictionary of Greek and Roman Biography*; and Perier, *Mém. de la Soc. d'Anthrop. de Paris*, 1870, iii. 215.
[4] Niebuhr, *Alte Geschichte*, i. 305, 306.
[5] McLennan, *Primitive Marriage*, pp. 221, 222.
[6] Grote, *History of Greece*, ii. 511.
[7] McLennan, *Prim. Mar.* p. 298.

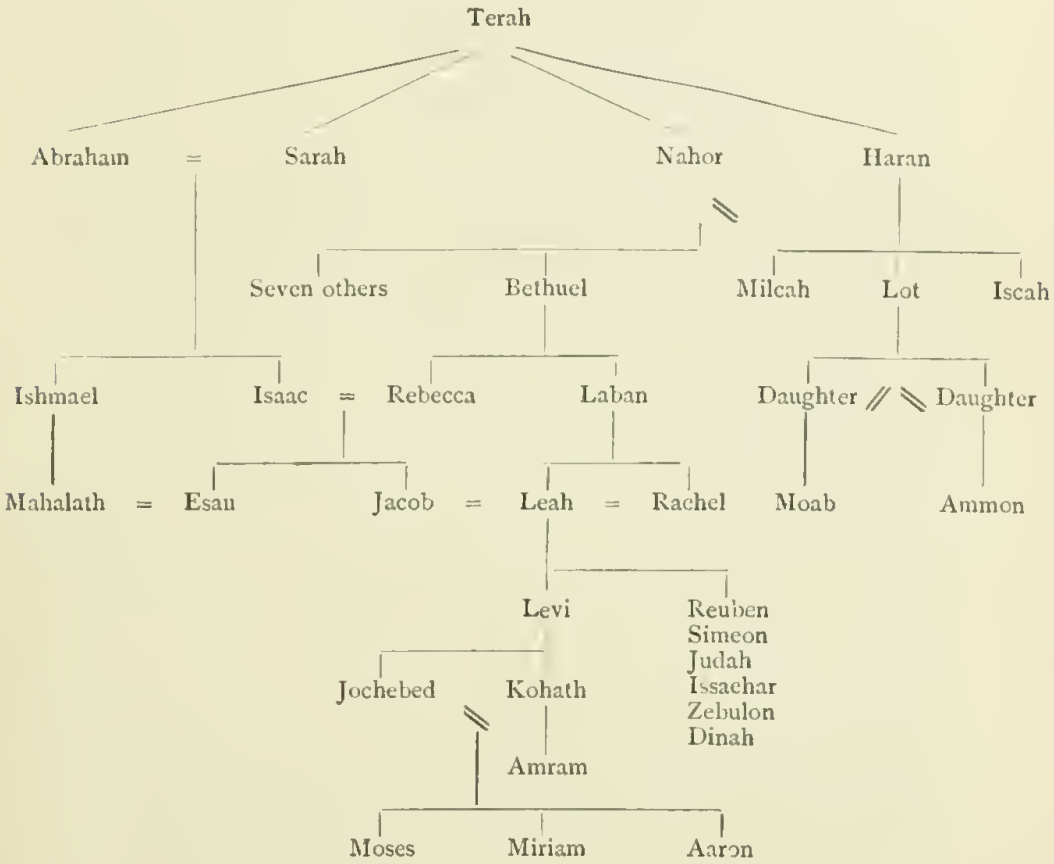
some women were the recognised mistresses of two hearths, yet this sort of bigamy was strictly forbidden to the men, and never perhaps permitted, except in the extraordinary case of King Anaxandrides, when the royal Herakleidan line was in danger of becoming extinct. Polybius also states that three or four Spartan brothers sometimes had only one wife between them.[1]

To this state of the marriage law Grote partially ascribes the fall of Sparta, on the general ground that 'it has been observed often as a statistical fact, that a close corporation of citizens, or any small number of families, intermarrying habitually among one another, and not reinforced from without, have usually a tendency to diminish.'[2] But I have protested, and must protest, against an assumption on such vague grounds, when there are so many other facts to account for the same thing. We find Xenophon pointing with 'pride to the tall and vigorous breed of citizens which the Lykurgic institutions had produced. The beauty of the Lacedæmonian women was notorious throughout Greece, and Lampitô, the Lacedæmonian woman introduced in the Lysistrata of Aristophanes, is made to receive from the Athenian women the loudest compliments upon her fine shape and masculine vigour.'[3] Now this 'beauty and masculine vigour' is just what the offspring of consanguineous marriages are said not to have; moreover, the old prohibition against the naturalisation of strangers was no longer in force when Sparta began to decline.[4] Hence we find that at a time when marriages between near kin were frequent, and human beings were treated as a modern breeder would treat his cattle, the people were handsome and healthy, and there was no sign of degeneration. But at the same time we cannot be astonished that an institution like that of Lykurgus, the foundation of which was so utterly contrary to all human nature, should ultimately sink under the waves of a reform more gracious to human sympathies and more tender to its passions. Nor

[1] Grote, *History of Greece*, ii. 511, 512.
[2] *Ibid.* pp. 526, 527.
[3] *Ibid.* pp. 513, 514.
[4] *Ibid.* p. 527.

should we wonder that that reform should involve disturbance and even anarchy.

The development of Jewish marriage law was no exception to the general rule. The earliest recorded form is a transition from the third to the fourth stages.[1] Female kinship is still the only recognised blood relationship, but the real heads of families are beginning, by a sort of adoption, to



consider their children as their own. Thus Abraham married Sarah, his half-sister on the paternal side;[2] Nahor married

[1] Unless we look upon the incest of Lot as a return to the earlier form of the third stage. But the story is only valuable in showing that the Jews were not very much shocked at the idea.

[2] Josephus makes her his niece. See *Jewish Antiquities*, book i. chap. vii. sec. 1. But this is only the common tradition, taken for granted by Josephus and by Jerome, who supposed Sarah to be identical with Iscah, the daughter of Haran, and sister of Lot, called the 'brother' of Abraham (Genesis xiv. 14, 16

Milcah, his brother's daughter ;[1] Amram, the father of Moses, married his paternal aunt, Jochebed ;[2] Othniel married Achsah, his niece, the daughter of his brother Caleb ;[3] Amnon might have married his sister on the father's side, Tamar, if he had taken the trouble to get his father's consent.[4] A passage in Ezekiel, where the prophet enumerates the sins of Jerusalem, is confirmatory of this ; for in saying another 'hath humbled his sister, his father's daughter,'[5] he shows that, notwithstanding the prohibitions in Leviticus, there was still a tradition that a sister, a father's (but not a mother's) daughter, might legitimately marry her brother.

By the prohibitions in Leviticus a man is forbidden to marry a mother, a step-mother, sister, half-sister (whether legitimate or not), grand-daughter, aunt (whether by consanguinity on either side or marriage on the *paternal* side), daughter-in law, brother's wife (except when she came under the provisions of the levirate law), step-daughter, wife's mother, step-grand-daughter, or wife's sister during the wife's life. To these degrees the Talmudists added grandmother, great-grandmother, great-grandchild, etc. But these prohibitions must date from a period much later than is usually

See Smith's *Dictionary of the Bible*, arts. 'Sarah' and 'Iscah'). Abraham himself speaks of her as the daughter of the same father, but of a different mother (Genesis xx. 12).

[1] Genesis xi. 26–29, and xx. 12. [2] Exodus vi. 20.

[3] Joshua xv. 17.

[4] Tamar, indeed, says : 'No such thing ought to be done in Israel' ; but this means no such outrage to propriety, for she adds : 'Speak unto the King, for he will not withhold me from thee' (2 Samuel xiii. 13). Absolom, her brother-german, takes upon himself to avenge the outrage, which effectually disposes of the commentators who sought to explain the permission expected from the King by the fact that the Jews were forbidden to marry a foreign wife. See Exodus xxxiv. 16 ; Deuteronomy vii. 3 ; Ezra x. 2 ; Nehemiah xiii. 27. Only the tribe of Benjamin was permitted, on an exceptional occasion, when they had been nearly exterminated (see Judges xxi.) A soldier, however, might at once prostitute a woman taken in war, after which she was entitled to a month's mourning, and then he might marry her after naturalisation (Deuteronomy xxi. 13). Now, say the commentators, Tamar's mother, Maachar, was a prisoner of war, Tamar was the offspring of the first intercourse, before her mother was naturalised or had become a wife of David ; hence she was nobody's child, no relation to Amnon, and even no relation to her uterine brother Absalom. See Jurieu, *Critical History of the Doctrines, etc. of the Church* : Trans. 1705, i. 208, 209.

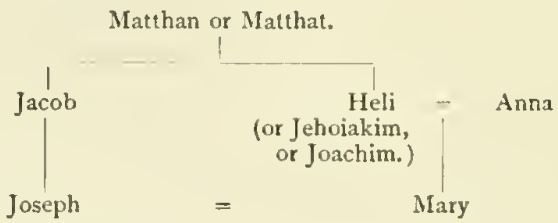
[5] Ezekiel xxii. 11 : 'And one hath committed abomination with his neighbour's wife ; and another hath lewdly defiled his daughter-in-law ; and another in thee hath humbled his sister, his father's daughter.'

attributed to them, since relationship is fully recognised on both sides, and marriages are prohibited by them which commonly took place, at least until after the reign of Solomon.

McLennan points out that in Genesis,[1] when a man marries *he* shall 'leave his father and mother, and shall cleave unto his wife'; which is just what actually happens in the case of Beenah marriages, and was the case when Jacob married Laban's daughters. That is, that in place of purchasing a wife, as Rebekah was purchased for Isaac,[2] he served for a wife, he left his family and entered that of Laban; his children were not his father's descendants, but Laban's descendants.[3] When he steals away with them the marriage becomes Sadîca, upon condition that Jacob takes no other wives.[4] Professor Robertson Smith also points out that when Samson married a Philistine wife she remained with her people, as in *mota* marriages.[5] In times a little later we see signs of Ba'al marriage in the custom of inheriting a father's wives. There is Ishbosheth, for instance, jealous and fearful, like all weak Oriental potentates, of his famous general Abner; and why? Because he has married one of Saul's wives, which is the right of his successor.[6] So Absolom is advised by the wise Ahitophel that his usurpation will not be complete unless he takes his father's concubines.[7] So again Solomon slays Adonijah, since he looks upon his request that Abishag may be his wife as a sign of rebellion.[8] In the same way, an heiress was bound to marry her nearest kinsman. This law, it is said,[9] was enacted on the death of Zelophehad. He had five daughters and no sons, and they, on his death, claimed their inheritance in the tribe of Manasseh, which was allowed on condition that they married 'their father's brother's sons.'[10] So Ruth claimed Boaz as her kinsman, and therefore as bound to marry her; but he told her there was another more nearly related, who had the priority.[11] Again, we read that

[1] Genesis ii. 24.
[2] Genesis xxiv. 53.
[3] Genesis xxxi. 43.
[4] Genesis xxxi. 50. See McLennan, *Patriarchal Theory*, pp. 41, 44.
[5] Judges xv. Smith, *Kinship and Marriage in Early Arabia*, p. 176.
[6] 2 Samuel iii. 7.
[7] 2 Samuel xvi. 21.
[8] 1 Kings ii. 22.
[9] Smith's *Dictionary of the Bible*, art. 'Zelophehad.'
[10] Numbers xxvii. 1–11; xxxvi. 1–12.
[11] Ruth iii. 12, 13.

the sons of Mahli were Eleazar and Kish, 'and Eleazar died, and had no sons, but daughters: and their brethren the sons of Kish took them.'[1] St. Joseph and the Virgin Mary are reputed to have been first-cousins: thus:—



It is extremely doubtful whether Mary was the daughter of Heli or of Jacob. If the genealogy given by St. Luke refers to Mary, her father was Heli; if again Joseph was the son of the younger brother, and married his cousin, the daughter of his elder brother, she was the daughter of Jacob.[2] But, as Michælis points out, the Virgin Mary must have been an heiress, since she had to travel to Bethlehem, where the property probably was, to be registered. And since she was an heiress, and no heiress durst marry out of her tribe—seldom, even, out of her family—it follows that, in all probability, Joseph was nearly related to her.[3]

Not only heiresses, but as a rule near kin intermarried, and marriages with foreigners were forbidden.[4] Thus Abraham makes his servant swear not to let his son marry a 'daughter of the Canaanites.'[5] So Isaac charged Jacob.[6] Esau had married two wives 'of the daughters of Heth,' greatly to the anger of his parents; and so, to please them, he added his cousin 'Mahalath, the daughter of Ishmael, Abraham's son' to his domestic establishment.[7] The modern Jews still adhere to the custom of marrying cousins and even nieces.

The Herods, Greeks in their sympathies, and Jews only by policy, seem to have regarded no Jewish prohibitions. In

[1] 1 Chronicles xxiii. 21, 22.

[2] She was connected by marriage with the tribe of Levi; hence it has been argued that she was not Joseph's cousin; but apparently on no sufficient grounds. See Smith's *Dictionary of the Bible*, art. 'Mary the Virgin.'

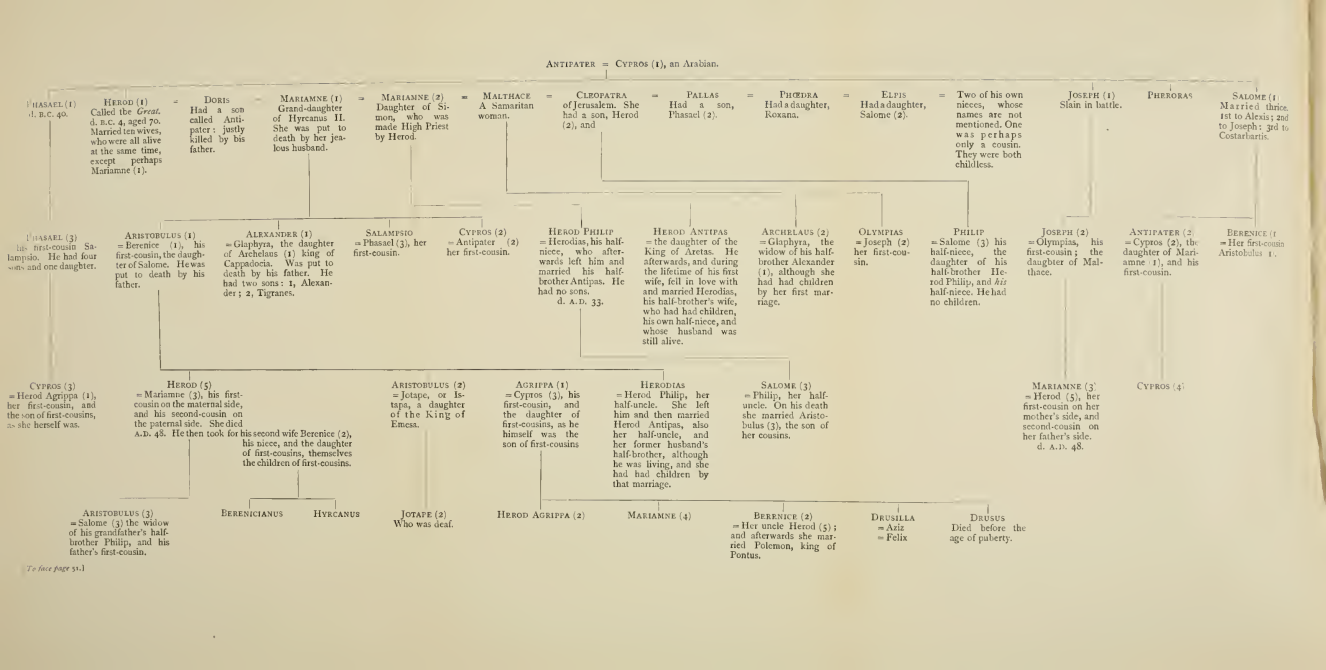
[3] Michælis, *Commentaries on the Laws of Moses*, 1814, i. 422, 423.

[4] See note 4, p. 48, *supra*.

[5] Genesis xxiv. 3, 4.

[6] Genesis xxviii. 1, 2.

[7] Genesis xxviii. 9.


ANTIPATER = CYPROS (1), an Arabian.
PHASAEL (1) d. B.C. 40.
HEROD (1) Called the Great. d. B.C. 4, aged 70. Married ten wives, who were all alive at the same time, except perhaps Mariamne (1).
DORIS Had a son called Antipater; justly killed by his father.
MARIAMNE (1) Grand-daughter of Hyrcanus II. She was put to death by her jealous husband.
MARIAMNE (2) Daughter of Simon, who was made High Priest by Herod.
MALTHACE A Samaritan woman.
CLEOPATRA of Jerusalem. She had a son, Herod (2), and
PALLAS Had a son, Phasael (2).
PHOEDRA Had a daughter, Roxana.
ELPIS Had a daughter, Salome (2).
Two of his own nieces, whose names are not mentioned. One was perhaps only a cousin. They were both childless.
JOSEPH (1) Slain in battle.
PHERORAS
SALOME (1) Married thrice. 1st to Alexis; 2nd to Joseph; 3rd to Costarbarus.
PHASAEL (3) his first-cousin Salampsio. He had four sons and one daughter.
ARISTOBULUS (1) = Berenice (1), his first-cousin, the daughter of Salome. He was put to death by his father.
ALEXANDER (1) = Glaphyra, the daughter of Archelaus (1) king of Cappadocia. Was put to death by his father. He had two sons: 1, Alexander; 2, Tigranes.
SALAMPSIO = Phasael (3), her first-cousin.
CYPROS (2) = Antipater (2) her first-cousin.
HEROD PHILIP = Herodias, his half-niece, who afterwards left him and married his half-brother Antipas. He had no sons. d. A.D. 33.
HEROD ANTIPAS = the daughter of the King of Aretas. He afterwards, and during the lifetime of his first wife, fell in love with and married Herodias, his half-brother's wife, who had had children, his own half-niece, and whose husband was still alive.
ARCHELAUS (2) = Glaphyra, the widow of his half-brother Alexander (1), although she had had children by her first marriage.
OLYMPIAS = Joseph (2) her first-cousin.
PHILIP = Salome (3) his half-niece, the daughter of his half-brother Herod Philip, and his half-niece. He had no children.
JOSEPH (2) = Olympias, his first-cousin; the daughter of Malthace.
ANTIPATER (2) = Cypros (2), the daughter of Mariamne (1), and his first-cousin.
BERENICE (1 = Her first-cousin Aristobulus 1.
CYPROS (3) = Herod Agrippa (1), her first-cousin, and the son of first-cousins, as she herself was.
HEROD (5) = Mariamne (3), his first-cousin on the maternal side, and his second-cousin on the paternal side. She died A.D. 48. He then took for his second wife Berenice (2), his niece, and the daughter of first-cousins, themselves the children of first-cousins.
ARISTOBULUS (2) = Jotape, or Ispapa, a daughter of the King of Emesa.
AGRIPPA (1) = Cypros (3), his first-cousin, and the daughter of first-cousins, as he himself was the son of first-cousins
HERODIAS = Herod Philip, her half-uncle. She left him and then married Herod Antipas, also her half-uncle, and her former husband's half-brother, although he was living, and she had had children by that marriage.
SALOME (3) = Philip, her half-uncle. On his death she married Aristobulus (3), the son of her cousins.
MARIAMNE (3) = Herod (5), her first-cousin on her mother's side, and second-cousin on her father's side. d. A.D. 48.
CYPROS (4)
ARISTOBULUS (3) = Salome (3) the widow of his grandfather's half-brother Philip, and his father's first-cousin.
BERENICIANUS
HYRCANUS
JOTAPE (2) Who was deaf.
HEROD AGRIPPA (2)
MARIAMNE (4)
BERENICE (2) = Her uncle Herod (5); and afterwards she married Polemon, king of Pontus.
DRUSILLA = Aziz = Felix
DRUSUS Died before the age of puberty.

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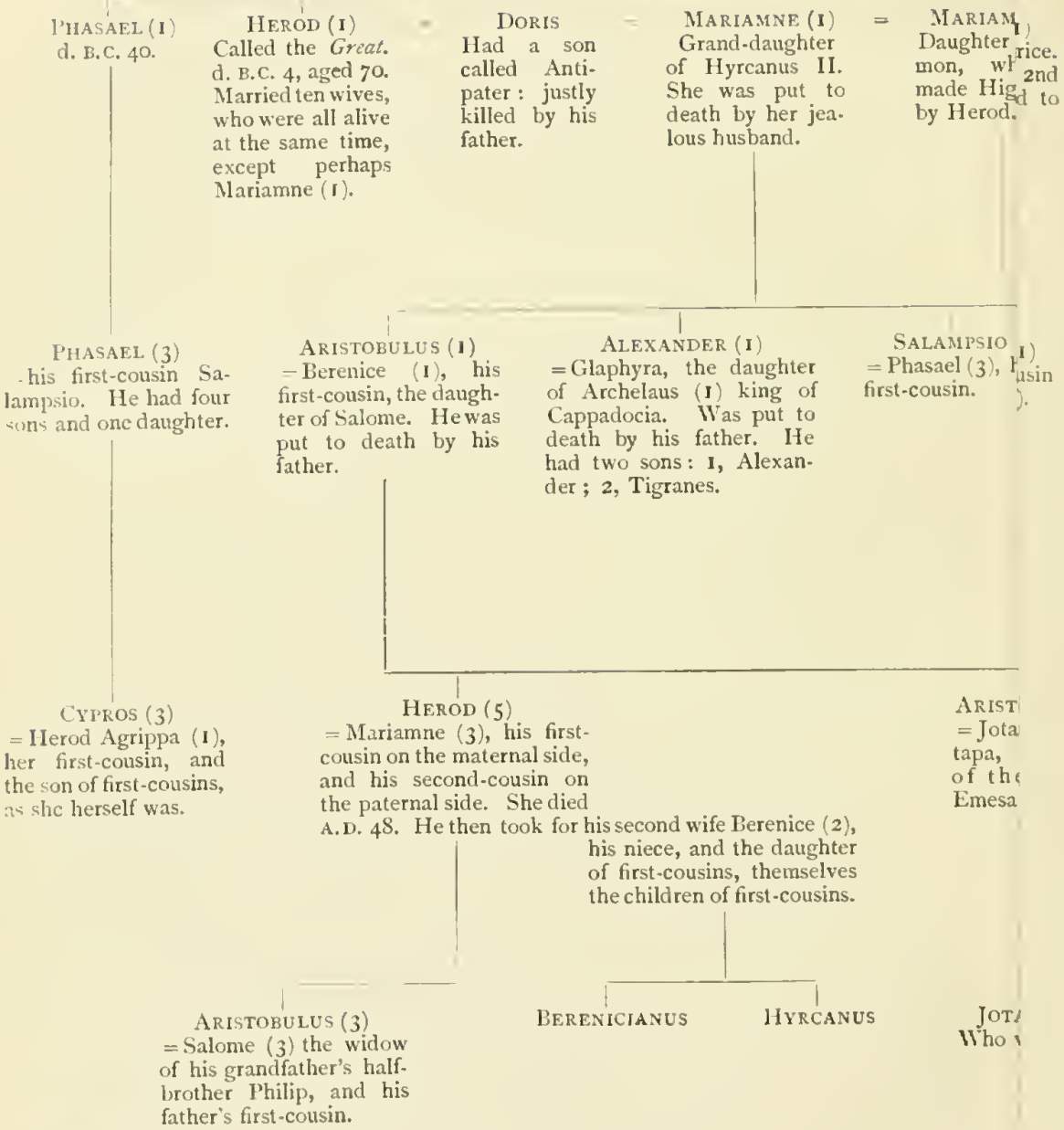
the annexed genealogical table it will be seen that they took their brother's wives in the lifetime of the brother, and even though there were children of the first marriage. The table is otherwise instructive; for they frequently married their nieces, and still more frequently their first-cousins, while they laboured under no 'visible curse,' as Niebuhr says the Ptolemys did, for doing the same thing.[1]

Of all nations the early law as to the prohibited degrees among the Romans is the most difficult to trace. Sir H. Maine relies upon this great nation for his theory of primitive marriage law as patriarchal;[2] and, indeed, so far as Latin records go, the system of male relationship and the power of the oldest male relative was carried to a higher degree than among any other people.

The *paterfamilias* was the grand centre around which all relationship was grouped. His power over his children was as the power of a master over his slaves; so long as he was alive, and did not choose to manumit or free them, so long were they absolutely subject to his commands. Marriage without manumission did not free any child from allegiance to his father; hence a husband was not even master over his own wife, unless part of the marriage ceremony had been manumission. As the character of this relationship was so essentially dependent on the father, an emancipated son or daughter was, until the time of Justinian, no longer any relation to him. The one had become the head of a new family; the other, by marriage after emancipation, had entered into another family; and neither would be entitled to any inheritance from their father; while an unemancipated son, or a daughter married *sine conventione in manum*, since they still belonged to their father's family, would both be entitled to inherit after his death. Should there be no unemancipated children, or adopted child, the inheritance passed to the *consanguinei*, or brothers and sisters of the *paterfamilias*, to the exclusion of the female side; and should there be no *consanguinei* the

[1] See *supra*, p. 36.
[2] Maine, *Ancient Law*, 1885, chap. v.; and *Early Law*, 1883, chap. vii.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ARIST
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tapa,
of th
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HYRCANUS
JOTA
Who

[To face page 51.]

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[1] See *supra*, p. 36.
[2] Maine, *Ancient Law*, 1885, chap. v. ; and *Early Law*, 1883, chap. vii.

inheritance went to the *agnati*, or male descendants of a common ancestor.

Marriage could be contracted in several ways, according to the position the wife was to occupy in her husband's house. A marriage *sine conventione in manum* did not free the wife from her father's control, or give her into her husband's power. She was still in the position of servitude to her father, still belonged to his family, and her property was not made over to her husband. On the contrary, she could even lend him money at interest, and send her slave to demand repayment, just as if he were a perfect stranger; while he, on his side, could bring an action against his wife for the recovery of any jewels he might have lent her. Indeed, so separate was the property of man and wife married *sine conventione* that a law was passed which forbade either to give anything to the other, to the end that the richer of the two should be protected against the constant worry of the poorer.[1] A woman who contracted a marriage *cum conventione* went over to her husband's family, and was entirely in her husband's power. She still occupied the position she had formerly occupied in the eye of the law, but she had changed her allegiance. Though she was styled *materfamilias*, she occupied the same position as her own children, for no one could divide the authority with a *paterfamilias*. In both this and the former kind of marriage the husband was *paterfamilias* to, and hence absolute master over, his own offspring; they only differed from each other in respect to the relation of the wife to her husband and her family.

Consent or cohabitation alone was sufficient to establish a marriage *cum conventione*, just as in Scotch marriages at the present time; but if the wife did not wish to enter into her husband's family, she could break the *usus* by absenting herself for three days in every year. This *usus*, which converted a marriage *sine conventione* into a marriage *cum conventione*, was, however, abandoned at a later period of their legal history.[2] There was, in addition to these forms, a sort of

[1] Laboulaye, *Cond. des Femmes*, pp. 23, 26, 33, 35, 37; and Smith, *Dictionary of Greek and Roman Antiquities*, art. 'Matrimonium.'

[2] Smith, *Dict. ut sup.*

morganatic marriage, known as *concubinatus*, in which the parties were not legally married, and the children belonged to the mother. Neither mother nor children had any claim on the father, but in contracting such a marriage a man was not allowed to transgress the prohibited degrees; nor, after he had contracted a marriage of this sort, could he enter into another of the same kind during the existence of the first. If he did so the connection was called *stuprum*, and the offspring could not subsequently be made legitimate, as was allowed by Justinian in other cases.[1]

Did we put upon these laws the interpretations they apparently should have, as Sir H. Maine has done, we are immediately met by a number of difficulties. In the first place we have to explain how the Romans alone of all nations began with a stage of marriage law, which we find among other peoples where there is any law at all resembling it, only as a development from a more primitive law. Then we have to account for the semblance of capture in their marriage rights; the form of marriage *sine conventione*, which is so like *Sadîca* marriage; and the curious one-sidedness of relationship, which nevertheless recognised the nearest female relations as *consanguinei*, which is so like the state of Greek thought already discussed,[2] where female relationship has just begun to be denied altogether.

The Messrs. McLennan[3] account for the Roman law of relationship on this latter ground. Ignoring the *patriæ potestas* upon which Sir H. Maine lays every argument,[4] and which even Sir John Lubbock[5] considers to be the foundation of the Roman law, they point out that it is precisely the same state of things *mutatis mutandis* as relationship only through females, where all male relationship is disregarded and ignored. They therefore in imagination pass back to a period when the Romans were in the fourth stage of our table, the eleventh example, where a woman is captured or brought into her husband's power, and her own kin cut off. If, for example,

[1] Smith, *Dict. ut sup.* art. 'Concubina'; and Sandars' *Inst. of Just.* pp. 111, 113.
[2] See pp. 41, 42 of this work.
[3] McLennan, *The Patriarchal Theory*, chap. xiii.
[4] Maine, *ut sup.*
[5] Lubbock, *Origin of Civilisation*, p. 159.

she belonged to the Cat totem, and married into the Wolf totem, her children, in place of being Cats, would become by adoption Wolves. This is all on the ordinary road of development, as exemplified in other nations; and when this is once established as customary we have only to suppose that the Romans for a time adopted theories like those of Orestes to invert the former law of relationship altogether from a matriarchal to a patriarchal form. To this I may add that the *potestas* of the Roman 'heavy-father' may be explained by the same theory. For were the Cats, to take our former example, the equals in caste of the Wolves, we can hardly suppose the wife's kin would consent to a Ba'al marriage for her. She must therefore be either inferior in caste or a captive, and in either case practically her husband's slave. This, no doubt, was the case among all nations where Ba'al marriage first became customary. But among the Romans we find a peculiarly arrogant class of patricians, whose prototypes may and probably did regard any marriage with a woman not one of themselves as *contubernium*; her sons, who in an equal marriage would have belonged to her kin, but in this case did not, would scarcely be regarded as equals of freeborn patrician boys, and would therefore fall as entirely into their father's power as were his slaves, which is precisely the position of an unemancipated son in Roman law.

The above is not an impossible explanation, nor even improbable. It accounts for the difficulties ignored by Sir H. Maine, and for the traces of female relationship in the prohibited degrees, which would otherwise in the face of agnation be unaccountable. Moreover, it is confirmed by various traces of forms of marriage, such as we find in other communities. Thus Theopompus[1] declares that the Etruscans were in the second stage only of our table, the third form, having a community of wives. The rape of the Sabines, according to the Roman tradition, was also in strict agreement with a similar stage, say number four of the third stage. The next piece of

[1] In Athenæus XII. iii. 14. Νόμον εἶναί φησὶ παρὰ τοῖς Τυρρηνοῖς, κοινὰς ὑπάρχειν τὰς γυναῖκας * * * τρέφειν δὲ τοὺς Τυρρηνοὺς πάντα τὰ γινόμενα παιδία, οὐκ εἰδότας ὅτου πατρός ἐστιν ἕκαστον.

evidence is the marriages of the Tarquins. From the traditions the two sons of L. Tarquinius Priscus married the two daughters of their sister, or the two nephews of Tarquinius married his two grand-daughters ;[1] it is uncertain what relationship of the two was the true one. If the former, the marriage would belong to the second stage, form three, which is unlikely in view of the surrounding traditions. If the marriage was between cousins, it would come under the third stage, form seven, which is much more consonant with what we might expect. Another remarkable instance is that when Claudius Nero married Agrippina, his brother's daughter, an obsequious senate declared that, though such marriages were not customary, yet they were customary in other nations, nor did any law forbid it.[2] Here we see a struggle between the old ideas and the new, for marriage with a sister's daughter was still forbidden,[3] and yet the sentiment of the Roman people was against such marriages. Suetonius says no one but an obscure libertine followed Claudius' example.[4] Constantius and Constantine forbade the marriage of uncle and niece on either side under penalty of death,[5] a prohibition which again appears in Justinian's 'Institutes.'[6] According to Plutarch, even the marriages of first-cousins was prohibited among the early Romans, until permission was given to a popular favourite to marry an heiress, his first-cousin,[7] from which I suspect that there may

[1] 'Hic L. Tarquinius, Prisci Tarquinii regis filius neposne fuerit, parum liquet : pluribus tamen auctoribus filium ediderim. Fratrem habuerat Aruntem Tarquinium, mitis ingenii juvenem. His duobus, ut ante dictum est, duæ Tulliæ regis filiæ nupserant.' (Livy, i. 46.)

[2] 'Nullo exemplo deductæ in domum patrui fratris filiæ. * * * Nova nobis in fratrum filias conjugia : sed aliis gentibus sollemnia, neque lege ulla prohibita' (Tacit. book xii. 5, 6). 'Subornavit proximo senatu qui censerent, cogendum se ad ducendum eam uxorem * * * dandamque ceteris veniam talium conjugiorum' (Sueton. book v. 26).

[3] Gaius, i. 62 ; Ulpian, v. 6. Gothofredus in his notes to the *Codex Justin.* says : 'Quod Dion scribit Nervam vetuisse ne quis ἀδελφιδέην duceret, de sororis non de fratris filia intelligit.'

[4] Suetonius, *In Claud.* v. 26.

[5] *Cod. Theod.* book iii. *tit.* 12.

[6] Sandars' *Inst. of Just.* p. 107.

[7] Πρότερον γὰρ οὐκ ἐγάμουν τὰς ἀφ' αἵματος, ὥσπερ οὐδὲ νῦν τιτθίδας, οὐδὲ ἀδελφὰς γαμοῦσιν, ἀλλ' ὀψὲ συνεχώρησαν ἀνεψιαῖς συνοικεῖν ἐκ τοιαύτης αἰτίας. Ἀνὴρ χρημάτων ἐνδεὴς, τὰ δὲ ἄλλα χρηστὸς, καὶ παρ' ὀντιναοῦν τῷ δήμῳ τῶν πολιτευομένων ἀρέσκων, ἐπίκληρον ἀνεψιὰν ἔχειν ἔδοξε, καὶ πλουτεῖν ἀπ' αὐτῆς· ἐπὶ τούτῳ δὲ γενομένης αὐτοῦ κατηγορίας, ὁ δῆμος ἀφεὶς τὴν αἰτίαν ἐλέγχειν, ἔλυσε τὸ ἔγκλημα, ψηφισάμενος πᾶσιν ἐξεῖναι γαμεῖν ἄχρις ἀνεψιῶν, τὰ δὲ ἀνωτέρω κεκωλύσθαι. (Plutarch, *Quæst. Rom.* 6.)

have been a prohibition against marriage between first-cousins on the female side in ancient times, which afterwards led to some confusion when agnatic relationship came in. However this may be, the reason given by Plutarch is undoubtedly wrong ; for the Roman like the Greek law compelled an heiress to marry her nearest kinsman.[1] In later times, cousins undoubtedly married without let or hindrance. Cicero, for instance, says that Cluentius' sister married her paternal cousin, Aulus Aurius Melinus.[2] In Livy's oration of Sp. Ligustinus there is this clause, 'My father gave me to wife his brother's daughter.'[3] M. J. Brutus married the daughter of his mother's half-brother.[4] Quintilian, mourning for the death of his son, says he had intended to marry him to his maternal uncle's daughter.[5] By the annexed genealogical table, it will be seen that Augustus Cæsar gave his daughter to his sister's son, Marcellus. Drusus, the son of Augustus, also married his cousin Antonia, the daughter of Octavia. Levilla and Claudius, children of Drusus, married their cousins Caius Cæsar and Agrippina, children of Drusus' half-sister on the paternal side. And there are two instances of the children of sisters marrying: namely, Valerius Messala, who married Domitia, the daughter of his mother's half-sister by the same mother, and M. Æm. Lepidus, who married Drusilla, the daughter of his mother's sister, Agrippina. Tacitus[6] confirms Plutarch in saying that in the early days marriages between first-cousins were unknown, which would be true if marriages between maternal cousins were forbidden, and if no relationship were recognised on the male side. He adds that as time went on cousin marriages increased in number ; but when Gibbon[7] remarks that 'the repeal of the ancient law and the practice of five hundred years were in-

[1] Jeremy Taylor, *Duct. Dubit.* book ii. chap. ii. rule iii. sec. 53, says : 'One *Cassia* was declar'd *inheretrix* upon condition, *Si consobrino nupsisset.*' He refers to l. 2, *C. de instit. et subst.* ; and Papinian, 'Conditionem illam, si consobrinam duxeris, hæreditatis institutioni utiliter adjici posse,' l. 23 et 24, *D. de ritu nuptiarum.*

[2] Cicero, *Orat. pro Cluent.*

[3] Livy, book xlii. chap. xxxiv.

[4] Smith, *Dictionary of Greek and Roman Biography*, arts. 'Cato Uticensis' and 'Portia.'

[5] Quintilian, *Inst. Orat.* book vi. *Proœm.*

[6] Tacitus, *Annal.* book xii. 6 : Conjugia 'sobrinarum diu ignorata, tempore addito percrebuisse.'

[7] Gibbon, *Decline and Fall of the Roman Empire*, iii. 128, note 51.

JULIA (1)
IS ATIUS BALBUS

ATIA
of Caius Octavius.

MARCELLA
(*the Elder*)
=1st, Sextus Apuleius.
=2nd, Julus Antonius, her step-brother.

MAR
(*the Y*
=M. V
Agrippa,
vorced h
cousin Jul

A (3)
Emilius
.

M. AGRIPPA
Posthumous.

TIBE
GEME
killed
age of
Caligul

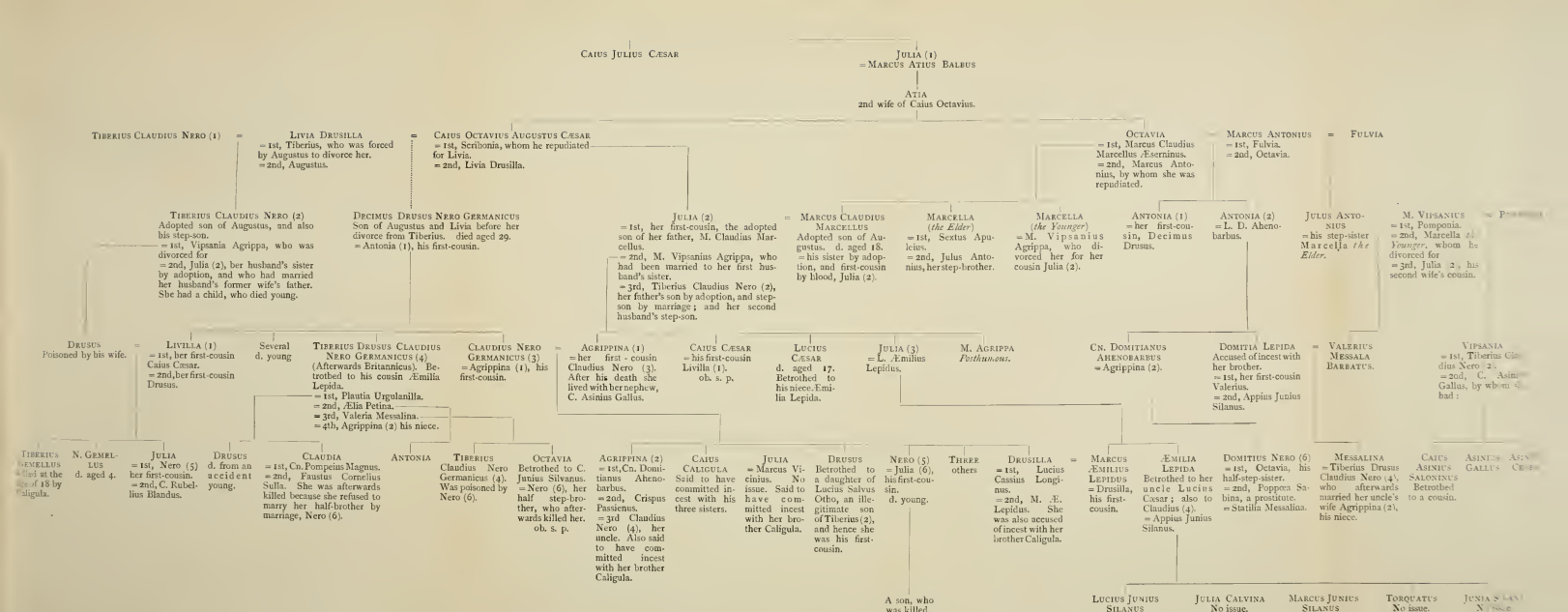
ERO (5)
ulia (6),
first-cou-
young.

THREE
others

DRUSILLA
=1st, Luci
Cassius Long
nus.
=2nd, M. A
Lepidus. Sh
was also accuse
of incest with h
brother Caligul

son, who
s killed.

[To


Caius Julius Cæsar
Julia (1)
= Marcus Atius Balbus
Atia
2nd wife of Caius Octavius.
Tiberius Claudius Nero (1)
=
Livia Drusilla
= 1st, Tiberius, who was forced by Augustus to divorce her.
= 2nd, Augustus.
=
Caius Octavius Augustus Cæsar
= 1st, Scribonia, whom he repudiated for Livia.
= 2nd, Livia Drusilla.
Octavia
= 1st, Marcus Claudius Marcellus Æserninus.
= 2nd, Marcus Antonius, by whom she was repudiated.
=
Marcus Antonius
= 1st, Fulvia.
= 2nd, Octavia.
=
Fulvia
Tiberius Claudius Nero (2)
Adopted son of Augustus, and also his step-son.
= 1st, Vipsania Agrippa, who was divorced for
= 2nd, Julia (2), her husband's sister by adoption, and who had married her husband's former wife's father. She had a child, who died young.
Decimus Drusus Nero Germanicus
Son of Augustus and Livia before her divorce from Tiberius. died aged 29.
= Antonia (1), his first-cousin.
Julia (2)
= 1st, her first-cousin, the adopted son of her father, M. Claudius Marcellus.
= 2nd, M. Vipsanius Agrippa, who had been married to her first husband's sister.
= 3rd, Tiberius Claudius Nero (2), her father's son by adoption, and step-son by marriage; and her second husband's step-son.
=
Marcus Claudius Marcellus
Adopted son of Augustus. d. aged 18.
= his sister by adoption, and first-cousin by blood, Julia (2).
Marcella (the Elder)
= 1st, Sextus Apuleius.
= 2nd, Julus Antonius, her step-brother.
Marcella (the Younger)
= M. Vipsanius Agrippa, who divorced her for her cousin Julia (2).
Antonia (1)
= her first-cousin, Decimus Drusus.
Antonia (2)
= L. D. Ahenobarbus.
Julus Antonius
= his step-sister Marcella the Elder.
M. Vipsanius
= 1st, Pomponia.
= 2nd, Marcella the Younger, whom he divorced for
= 3rd, Julia (2), his second wife's cousin.
=
Drusus
Poisoned by his wife.
=
Livilla (1)
= 1st, her first-cousin Caius Cæsar.
= 2nd, her first-cousin Drusus.
Several d. young
Tiberius Drusus Claudius Nero Germanicus (4)
(Afterwards Britannicus). Betrothed to his cousin Æmilia Lepida.
= 1st, Plautia Urgulanilla.
= 2nd, Ælia Petina.
= 3rd, Valeria Messalina.
= 4th, Agrippina (2) his niece.
Claudius Nero Germanicus (3)
= Agrippina (1), his first-cousin.
=
Agrippina (1)
= her first-cousin Claudius Nero (3). After his death she lived with her nephew, C. Asinius Gallus.
Caius Cæsar
= his first-cousin Livilla (1).
ob. s. p.
Lucius Cæsar
d. aged 17. Betrothed to his niece Æmilia Lepida.
Julia (3)
= L. Æmilius Lepidus.
M. Agrippa
Posthumous.
Cn. Domitianus Ahenobarbus
= Agrippina (2).
Domitia Lepida
Accused of incest with her brother.
= 1st, her first-cousin Valerius.
= 2nd, Appius Junius Silanus.
=
Valerius Messala Barbatus.
Vipsania
= 1st, Tiberius Claudius Nero (2).
= 2nd, C. Asinius Gallus, by whom she had:
Tiberius Gemellus
Killed at the age of 18 by Caligula.
N. Gemellus
d. aged 4.
Julia
= 1st, Nero (5) her first-cousin.
= 2nd, C. Fulbellius Blandus.
Drusus
d. from an accident young.
Claudia
= 1st, Cn. Pompeius Magnus.
= 2nd, Faustus Cornelius Sulla. She was afterwards killed because she refused to marry her half-brother by marriage, Nero (6).
Antonia
Tiberius
Claudius Nero Germanicus (4). Was poisoned by Nero (6).
Octavia
Betrothed to C. Junius Silvanus.
= Nero (6), her half step-brother, who afterwards killed her.
ob. s. p.
Agrippina (2)
= 1st, Cn. Domitianus Ahenobarbus.
= 2nd, Crispus Passienus.
= 3rd Claudius Nero (4), her uncle. Also said to have committed incest with her brother Caligula.
Caius Caligula
Said to have committed incest with his three sisters.
Julia
= Marcus Vinicius. No issue. Said to have committed incest with her brother Caligula.
Drusus
Betrothed to a daughter of Lucius Salvus Otho, an illegitimate son of Tiberius (2), and hence she was his first-cousin.
Nero (5)
= Julia (6), his first-cousin.
d. young.
A son, who was killed.
Three others
Drusilla
= 1st, Lucius Cassius Longinus.
= 2nd, M. Æ. Lepidus. She was also accused of incest with her brother Caligula.
=
Marcus Æmilius Lepidus
= Drusilla, his first-cousin.
Æmilia Lepida
Betrothed to her uncle Lucius Cæsar; also to Claudius (4).
= Appius Junius Silanus.
Domitius Nero (6)
= 1st, Octavia, his half-step-sister.
= 2nd, Poppeen Sabina, a prostitute.
= Statilia Messalina.
Messalina
= Tiberius Drusus Claudius Nero (4), who afterwards married her uncle's wife Agrippina (2), his niece.
Caius Asinius Salonianus
Betrothed to a cousin.
Asinius Gallus
Lucius Junius Silanus
Said to have committed incest with his sister Julia.
Committed suicide.
Julia Calvina
No issue.
Marcus Junius Silanus
He was poisoned.
Torquatus
No issue.
Junia Silana
No issue.

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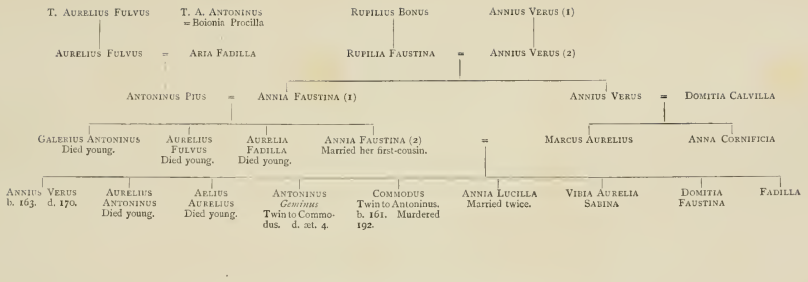
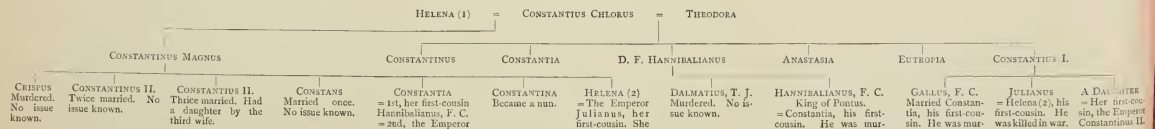

T. Aurelius Fulvus
T. A. Antoninus = Boionia Procilla
Rupilius Bonus
Annius Verus (1)
Aurelius Fulvus = Aria Fadilla
Rupilia Faustina = Annius Verus (2)
Antoninus Pius = Annia Faustina (1)
Annius Verus = Domitia Calvilla
Galerius Antoninus Died young.
Aurelius Fulvus Died young.
Aurelia Fadilla Died young.
Annia Faustina (2) Married her first-cousin.
= Marcus Aurelius
Anna Cornificia
Annius Verus b. 163. d. 170.
Aurelius Antoninus Died young.
Aelius Aurelius Died young.
Antoninus Geminus Twin to Commodus. d. æt. 4.
Commodus Twin to Antoninus. b. 161. Murdered 192.
Annia Lucilla Married twice.
Vibia Aurelia Sabina
Domitia Faustina
Fadilla


Helena (1) = Constantius Chlorus = Theodora
Constantinus Magnus
Constantinus
Constantia
D. F. Hannibalianus
Anastasia
Eutropia
Constantius I.
Crispus Murdered. No issue known.
Constantinus II. Twice married. No issue known.
Constantius II. Thrice married. Had a daughter by the third wife.
Constans Married once. No issue known.
Constantia = 1st, her first-cousin Hannibalianus, F. C. = 2nd, the Emperor Gallus, also her first-cousin.
Constantina Became a nun.
Helena (2) = The Emperor Julianus, her first-cousin. She died in childbirth.
Dalmatius, T. J. Murdered. No issue known.
Hannibalianus, F. C. King of Pontus. = Constantia, his first-cousin. He was murdered.
Gallus, F. C. Married Constantia, his first-cousin. He was murdered.
Julianus = Helena (2), his first-cousin. He was killed in war.
A Daughter = Her first-cousin, the Emperor Constantius II.

To face page 57.]

sufficient to eradicate the prejudices of the Romans, who still considered the marriages of cousins-german as a species of imperfect incest,' on an obscure allusion of the Emperor Julian,[1] he forgets that Julian himself married his first-cousin Helena, and that the interpretation usually given is therefore extremely doubtful.

Like other proud races, the Romans were unfavourable to intermarriage with foreigners. In the earlier period there was no *connubium*, or permission to contract a lawful marriage, even between a patrician and a plebeian ; while after the *Lex Canuleia*, which abolished this prohibition, there was yet no *connubium* between Romans and Latini and Peregrini, up to the time of Justinian ; or between Romans and freedmen until the *Lex Julia et Papia Poppæa*, after which only senators were forbidden such marriages, while freeborn citizens were allowed to intermarry with the freedmen class, provided that the latter were not women of bad character, an exception which Constantine extended to women of the lowest classes.[2] The connection of Antony and Cleopatra,[3] and afterwards of Titus and Berenice, was looked upon with disgust by the Romans ;[4] and they utterly refused to recognise the politic marriage of Gallienus with Pipa, daughter of the king of the Marcomanni.[5]

Even so late as the tenth century after Christ, Constantine Porphyrogenitus, in his instructions to his son, tells him how most decently to refuse intermarriage with foreign families. 'Every animal,' says the discreet emperor, 'is prompted by nature to seek a mate among the animals of his own species ; and the human species is divided into various tribes by the distinction of language, religion, and manners. A just regard to the purity of descent preserves the harmony of public and private life : but the mixture of foreign blood is a fruitful source of disorder and discord.' How deeply the son Romanus was

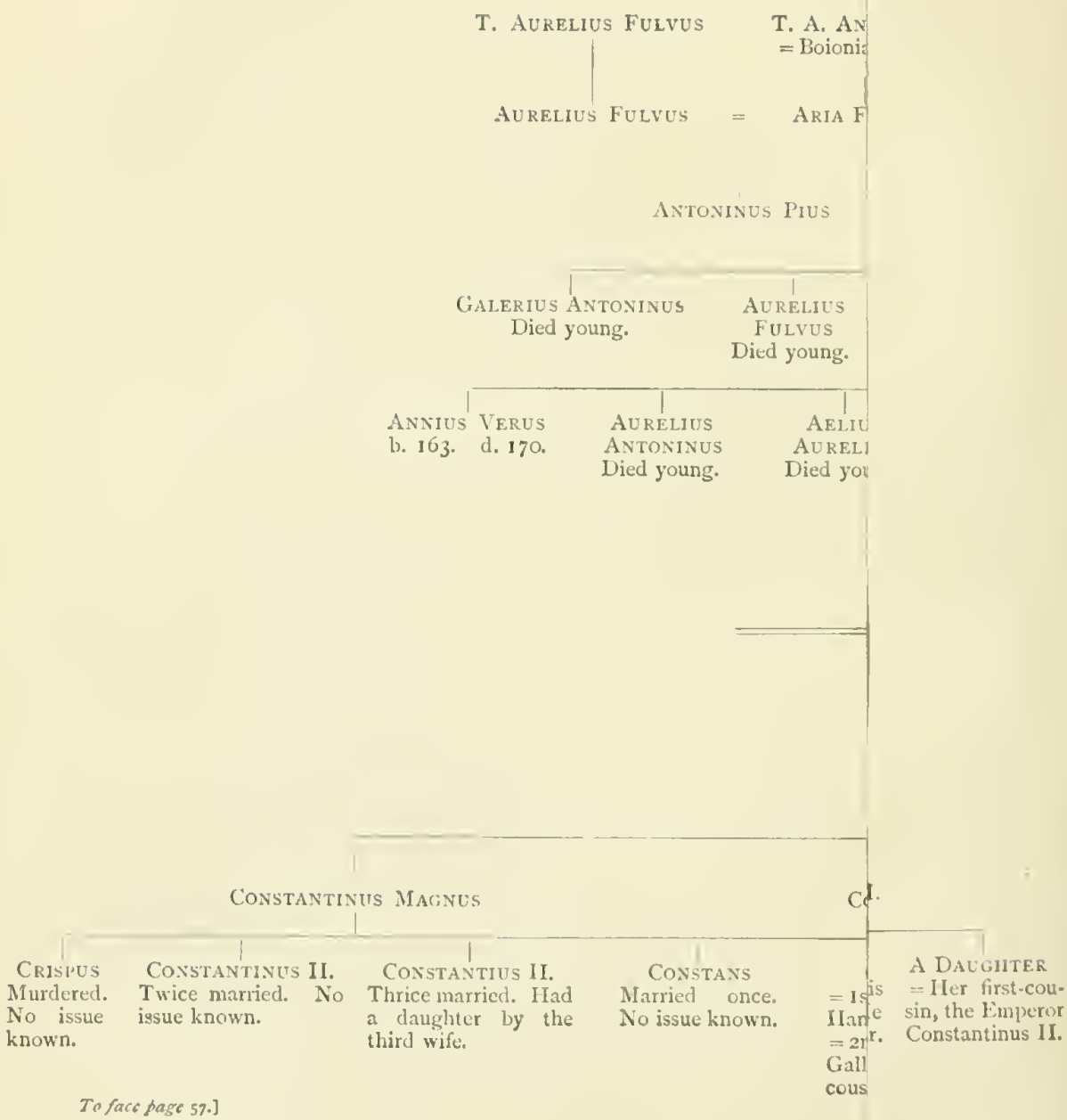
[1] Julian talks of γάμων τε ὀυ γάμων in his *Oratio VII.* Περὶ τοῦ πως κυνιστέον, among other scandals of the day. See his *Opera quæ supersunt.* Lipsiæ, fol. 1696, p. 228.

[2] Smith, *ut sup.* arts. 'Matrimonium' and 'Leges Juliæ'; and Sandars' *Institutes of Justinian*, *ut sup.*

[3] Virgil, *Æneid*, viii. 688. 'Sequiturque, nefas ! Ægyptia conjux.

[4] Suetonius, *In Tito*, chap. vii.

[5] Gibbon, *Decline and Fall of the Roman Empire*, i. 442.



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[4] Suetonius, *In Tito*, chap. vii.

[5] Gibbon, *Decline and Fall of the Roman Empire*, i. 442.

affected by this advice is seen in his marriage with Bertha, daughter of King Hugo of Italy.[1]

If we are to believe the general voice of authors of antiquity, most nations had few or no prohibited degrees. Thus Euripides in 'Andromache' makes the jealous Hermione cry, 'Such is the whole race of barbarians; a father marries his daughter, a son his mother, and a maid her brother, * * * and the law prevents none of these things.'[2] Ptolemy says that the inhabitants of Northern Africa, namely, those of Cyrenaica, Marmarica, Ægyptus, Thebaïs, Oasis, Troglodytica, Arabia, Azania, and Æthiopia Media might intermarry with their sisters.[3] Herodotus says the Machlyes and Auses knew no marriage or relationship. Plato, Lactantius, Aristotle, and Solinus say the same of the Garamantes.[4] Priscus says the Scythians knew no marriage prohibitions, that they married their daughters and sisters.[5] The Canaanites seem also to have married their near relations; for the Jews are commanded 'After the doings of the land of Egypt, wherein ye dwelt, shall ye not do: and after the doings of the land of Canaan, whither I bring you, shall ye not do: neither shall ye walk in their ordinances.' And then, further, after enumerating the forbidden degrees: 'Therefore shall ye keep Mine ordinance, that ye commit not any one of these abominable customs, which were committed before you.'[6]

A law of Constantius II., given at Antioch, and addressed to the Phœnicians, A.D. 339, prohibits marriage with a niece, whether a brother's or sister's daughter, under pain of death.[7] But this must have been a dead letter, for King Tabnith married his father's daughter Am'ashtoreth; and at Tyre

[1] Gibbon, *ut sup.* x. 123, 124.

[2] τοιοῦτο πᾶν τὸ βάρβαρον γένος·
πατήρ τε θυγατρὶ παῖς τε μητρὶ μίγνυται
κόρη τ' ἀδελφῷ, διὰ φόνου δ' οἱ φίλτατοι
χωροῦσι, καὶ τῶνδ' οὐδὲν ἐξείργει νόμος.
Androm. v. 173.

[3] Adam, *Fortnightly Review*, 1865, p. 713.

[4] *Loc. cit.* Freinseh's edition of Q. Curtius, ii. 578, note.

[5] Cited by Périer, *Mém. de la Soc. d Anthrop.* 1863, i. 197.

[6] Leviticus, xviii. 3, 30; xx. 23.

[7] Devay, *Du Danger des Mariages entre Cons.* p. 70.

such marriages occurred down to the time of Achilles Tatius (*circa* A.D. 500).[1]

In the time of Cæsar the ancient Britons practised group marriage; nor, if Cæsar's observation is correct, did they pay any regard to consanguinity.[2] Fuller, who quotes from Nennius, a somewhat doubtful authority, says Germanus called a synod, who condemned, among other things, 'the incestuous marriage of Vortiger, king of Britain, * * * who had taken his own daughter to wife,' from which union, nevertheless, 'a pious son, St. Faustus, was born.'[3]

The ancient Danes were probably in the habit of marrying their sisters;[4] and in the Icelandic story of the Volsungs and Niblungs[5] Signy by a stratagem makes her brother Sigmund father of her son Sinfjotli, and exults that he is both the son of Volsung's son and Volsung's daughter.

Heinneccius says it was customary among the ancient Germans to marry their sisters,[6] and perhaps mothers, or rather step-mothers, as appears from a little story cited by Gibbon: A princess of the Angles had been betrothed to Radiger, king of the Varni, a German tribe. The lover, however, from political motives, preferred his father's widow, the sister of Theodebert, king of the Franks. The British heroine was not to be defrauded of her husband. She gathered a fleet and army, landed at the mouth of the Rhine, vanquished Radiger, dismissed her rival, and married her captive.[7]

Much attention has lately been devoted to the development of marriage prohibitions among the Arabs. We have no record of the first stage, but Professor Robertson Smith shows that the ancient Arabs were neither exogamous nor endogamous, kinship was entirely through females, and that paternity of children was a matter of indifference, since they belonged to the tribe. Strangers were therefore allowed to form marriages more or less temporary and more or less secret,

[1] Smith, *Kinship and Marriage in Early Arabia*, p. 163. [2] Cæsar, v. 14.
[3] Fuller, *The Church History of Britain*, 1655, p. 31.
[4] Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 552.
[5] Translation by Magnùsson and Morris, pp. 17, 18, 25.
[6] Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 552.
[7] Gibbon, *Decline and Fall of the Roman Empire*, vol. vi. 380.

but the woman was not allowed to leave the tribe.[1] Subsequently as individual marriages through capture of wives became more common, men were willing to make an arrangement by which their wife by purchase practically renounced her tribe, and her children therefore belonged to her husband's tribe; until ultimately relationship through males became recognised.[2] The various stages of development frequently coexisted and are ably traced out by Professor Robertson Smith, whose evidence can scarcely be condensed; nor is the subject, unless generally, within the scope of this work; the prohibitions naturally followed the change in the recognition of paternity. In the early times there was no bar to marriage on the male side, excepting perhaps that a man could not marry his daughter, supposing he knew her as such. On the female side marriage was forbidden with a mother, a uterine sister, a maternal aunt, and possibly with a first-cousin on the maternal side.[3]

Up to Mohammed's time the strong conservatism of marriage customs had apparently resisted the change which acknowledged kinship through males, but it was impossible that its stronghold in the minds of the people should remain unbreached. Mohammed therefore only made legal in the Koran prohibitions which were already recognised, and to announce as he did that prohibitions of marriage which were illegal on the female side were equally illegal on the male was only putting into the law what was already recognised as proper by the people. Henceforward all marriages were forbidden between persons more nearly related than first-cousins, and to the old prohibitions of affinity, which forbade marriage with a wife's mother or a wife's daughter if she were under the guardianship of her mother's husband, were added step-mother and son's wife if the son was not merely a son by adoption, as well as the old Jewish law, which forbade marriage with two sisters at the same time.[4]

Though relationship on the male side was thus, as it were, officially recognised, it was not by any means lessened on the

[1] Smith, *Kinship and Marriage in Early Arabia*, pp. 69-72.
[2] *Ibid.* pp. 73-76.
[3] *Ibid.* pp. 86-88, 163-165.
[4] *Ibid.* pp. 163-166.

female side, as was the case in some other peoples, notably the Romans. The maternal uncle was still recognised as the nearest relation ;[1] the mother's tribe still took a paternal interest in her children, and hence we see that though a woman was usually contracted by marriage into her husband's tribe she preferred an endogamous marriage, so that her kin might still be near to protect her.[2] The traces of relationship through females alone, and the custom of obtaining wives by capture, is also seen in the right of males to their paternal cousins. This custom, which was and is very widely spread in Arabia, is explained on the simple principle of inheritance the moment women are recognised as chattels. A man's nearest relatives are his sister and his sister's children. Under a system of female kinship first-cousins, the children of sisters, are regarded as brothers and sisters. But when women are captured, and their relationship with their own tribe severed and disregarded, the children belong to the husband, and are of his tribe ; and hence the children of a brother and sister, provided the sister is not a captured wife and the brother's wife is a captured wife, are regarded as brothers and sisters, or nearly so. Were savages logical, the children of two brothers whose wives were captured should also be regarded as brothers and sisters ; but strongly ingrained ideas are not so easily got rid of, and hence the children are simply the nearest kin or cousins. The same is the case when the marriages simulate capture, and a wife is taken *in manu*, or in the case of Ba'al marriages, where it is easy to see that since relationship is reckoned both on the male and female side the relationship should be stronger in that side on which relationship has always been recognised. This would also explain the hesitation sometimes shown on the face of this well-established right of a paternal cousin to his cousin's hand, as to the advisability of such marriages. A paternal cousin is his uncle's nearest heir to the daughter's person ; but the stronger male relationship becomes while ideas as to the quasi-fraternal nature of the relationship between first-cousins are still held, the greater are the doubts and confusion as to the

[1] Wilken, *Das Matriarchat*, pp. 44-47. [2] Smith, *ut sup.* pp. 102, 156.

propriety of marriage between them, which is well illustrated in a story given by Lane,[1] how a man saw two lovers embrace each other and fall dead. 'So I inquired of the old man respecting them; and he answered me, This was my daughter, and this was the son of my brother. Their love hath brought them to the issue which thou beheldest. I said to him, May God give thee reparation! Didst thou not marry them to each other? He answered, I feared reproach and disgrace, and now I have fallen into both!'

The legality of these marriages is undoubted: the 'Thousand and One Nights' teems with stories showing the right of a man to the hand of the 'daughter of his uncle.'[2] The modern Arabs look upon it as so natural that when Lady Duff Gordon told the people of Thebes that 'the son of her uncle' was coming, they took for granted he must be her husband.[3] A cousin has not to pay so much for his wife, rather to the disgust of fathers of pretty girls, who sometimes try to take a mean advantage of their dear nephews by suddenly demanding the marriage price during his absence. A cautious man will therefore always take care to leave four trustees in charge of the money whenever he may have occasion to go on a journey.[4]

Nevertheless, during the transition period, considerable doubt existed on the subject. Mr. Goldziher[5] cites the poet 'Amr. b. Kolthum, who recommends his children not to marry in their own family, for domestic enmity arises therefrom.' Al-Meidânî cites a proverb, 'Marry strangers, that your children may be strong.' Badjuri expresses the same idea on the ground that men only feel slightly drawn to

[1] Lane, *Thousand and One Nights*, edition 1839, ii. 601.

[2] *E.g.*: Payne's *Thousand and One Nights*, i. 14, 20, 58, 100, 169, 174, 178, 267; ii. 223, 243, 323; iii. 223, 268; iv. 166, 188; v. 31, 260, 278; vi. 189, 212. Payne, *Tales from the Arabic*, i. 150, 185, 200, 253; ii. 61, 66. Mrs. Godfrey Clerk, *Ilâm-en-Nâs*, pp. 161, 207.

[3] Lady Duff Gordon, *Last Letters from Egypt*, 1875, p. 273. She also says she visited, at Cairo, Mustafa Bey Soobky and saw 'his wife, a Georgian slave whom he had married—his daughter by a former wife whom he had married when he was fourteen.' *Ibid.* p. 49. In all probability this was a marriage with a step-daughter, which in some cases was permitted (see Professor R. Smith, *ut sup.* p. 290).

[4] Burckhardt, *Notes on the Bedouins and Wahabys*, pp. 113, 272.

[5] In the *Academy*, xviii. 26, No. 427, for July 10, 1880.

near relatives. Al-Meidânî also describes a hero as 'no weakling son of paternal cousins'; and it is related of Omar that, having once asked why the Koreysh were so short, he was told, 'Because of their frequent marriages with paternal cousins.'[1] Sayings of this sort in regard to marriages with relatives are not common, but they are very natural upon any infraction of old social custom, and have been already considered in the previous chapter,[2] together with their bearing upon the subject of this work. The levirate is general. Lady Duff Gordon relates that her cook's brother died leaving 'a termagant widow and four children, and poor Abd-el-Kadir felt it his duty to bend his neck to the yoke, married her and has two more children.'[3] Hassan, the janizary of the American Consulate, also married his brother's widow. 'She is neither young nor handsome, but he considered it his duty to provide for her and the children, and not let her marry a stranger.'[4]

Volney asserts that the Druses follow a religion taught by a mad Egyptian Khalif, who, with an impostor, one Mohammed-ben-Ismael, acted entirely contrary to the Koran, forbidding pilgrimages and circumcision, and permitting the eating of pork and drinking of wine, and marriage with sisters and daughters.[5] De Sacy and Wolff say they are forbidden to marry a mother, sister, or aunt, whether on the paternal or maternal side, or any one not a Druse. Marriage with a paternal cousin is allowed, which seems to be much more probable than Volney's account.[6]

The Circassians believe themselves all to have sprung from a common stock. Formerly they were divided into 'fraternities,' all equal in social standing. No one was allowed to marry within his own fraternity; and where, as sometimes happened, several fraternities joined, all the members included in these fraternities, even though they might number several thousands, were considered too nearly related to inter-

[1] Goldziher, *ut sup.*; and Wilken, *Das Matriarchat*, pp. 58, 59.
[2] *Ante*, p. 21. [3] Lady Duff Gordon, *ut sup.* p. 36.
[4] *Ibid.* pp. 139, 140.
[5] Volney, *Voyage en Syrie*, Paris, 1737, ii. 35.
[6] Reich, *Ehe*, p. 57. An instance of marriage with a cousin is given in *Blackwood's Magazine*, 'Life in a Druse Village,' p. 236, No. 832, for February 1885.

marry. Marriage between two members of the same fraternity used to be punished with death; but owing to the unnatural arrangement that all these individuals were considered relatives, and that therefore both sexes might visit each other without scandal, unions which were considered incestuous became too common to punish in this way, and the punishment of death was commuted into a fine of two hundred oxen, and the restitution of the girl to her parents. They imposed the same laws upon their serfs. Family pride is very great; hence a chief always marries the daughter of another chief, and marriages with inferiors are extremely rare. Many of the Circassians are now Mohammedans, and consequently marry according to the precepts of the Koran.[1]

All writers of antiquity accuse the Persians of habitually marrying their nearest relatives, even in the direct ascending and descending line. The oldest of these is Xanthus, who said that the Magians married mothers, daughters, and sisters; while even the common people married their sisters. Herodotus, on the other hand, says that marriage with a sister was not customary until the time of Cambyses, who upon his return from Egypt set the example. But this is a legend, possibly learnt from the Egyptians during his stay at Heliopolis; for Cambyses died over fifty years before Herodotus was born. Ctesias, almost a contemporary of Herodotus, says that the Persians in general married their mothers; and from the accusation of Alkibiades by Antisthenes, this certainly appears to have been the common belief in Greece. Quintus Curtius relates that in the time of Alexander the Great the Persian satrap Sysimithres was married to his mother, by whom he had two sons. Strabo, alluding to the Magians only, confirms the custom and legality of such marriages. Lucan also accuses the Parthians of this; and Plutarch says that Artaxerxes married two of his own daughters; but, on the other hand, he says it was not lawful for the king to marry his mother. Josephus refers to

[1] Reich, *Ehe*, etc. pp. 261, 263; and McLennan, *Primitive Marriage*, pp. 101, 102.

the incest of Phraataces with his mother, and adds that his subjects considered this as bad as his parricide; but that was no doubt because it occurred during his father's lifetime. Tatian says that marriage with a mother was considered the proper thing among the Persian Magians; and Philo Judæus testifies to the same, the children of such unions being considered of noble birth. According to Clemens Alexandrinus, the Persians usually married mothers and sisters, and this statement is confirmed by Origen and by Minutius Felix. Diogenes Laertius says that they married their daughters, and adds from Sotion that the Magians also married their mothers. The evidence of the emperor Julian is similar: he says the Persians generally married mother, daughter, or sister; and two hundred years later Agathias asserts that at the time he wrote such marriages were both permitted and customary.[1]

With the single exception of Herodotus, therefore, all the authorities agree that the upper classes, at least, were accustomed to marry their sisters; and even Herodotus allows that this was so after the time of Cambyses. Most of them also agree that marriage in the direct ascending and descending line was also permitted and customary, but we should hesitate to accept this as a fact did we not possess other corroborative evidence.

From the table in the last chapter it will be seen that incest with the nearest relatives is only permitted in two phases of society—in the very earliest phase, where man hardly differs from any other beast, and again in one of the highest stages of civilisation compatible with a completely despotic government, where the rulers, and ultimately the ruling class, become too aristocratic to sully their blood by alliances with anyone outside their class. The Persians, undoubtedly, belonged to this latter stage, although, like all conquering races, they had no objection to the presence of foreign concubines in their hareems. But besides the Persians it is extremely doubtful whether any comparatively civilised

[1] For most of the above I am indebted to Mr. Adam, *Fortnightly Review*, 1865, pp. 715–718.

nations permitted marriage in the direct ascending and descending line; and it is probable that, being a conservative nation with a peculiar religion, the habits of a more primitive age became crystallised, and, as in most Eastern nations, what was at first a custom became incorporated in their religion. Even in Herodotus' time we see they still retained in Babylon a custom which, according to our table, is a stage on the road from hetairism to individual marriage;[1] it is therefore the less improbable that a form of marriage with their own people should have continued to be thought more honourable than marriages with strangers who were originally captives.

Zarathushtra wished to retain the primitive habits of hetairism, already disappearing in his time in favour of individual unions with captives; and the very fact that Alexander and the Greeks, and afterwards the Arabs, discouraged these practices made the more pious among the Persians cling with all the more tenacity to their persecuted customs. Although the Parsees of the present day repudiate these assertions, they are confirmed beyond a doubt by what is extant even of their ancient sacred books. Of these twenty-one books only the Vendidad is preserved entire, with a few fragments of the tenth and twentieth books. The Dubasrujd, one of the lost books, treated Khvêtûk-das, or marriage of near kin, in sixty-five chapters, and from the few remarks in the Avesta,[2] from traditions, and from the later sacred books which have followed those destroyed under the Arab Government, we may judge of the teachings of the Dubasrujd. Thus in the book of Ar*d*â-Vîrâf, which dates before the end of the sixth century, the saintly hero is made to marry his seven sisters. The Dâ*d*istân-i-Dînîk (*circa* A.D. 881) explains the origin of Khvêtûk-das in the union of Mashyâîh and Mashyâyôîh, the first people, who were brother and sister. In the Dînka*rd*, written over one thousand years ago, there is an allusion to the marriage of brother and sister from the eighteenth fargard of the Varastmansar Nask, and a clear allusion to the marriage of father and daughter from the

[1] Herodotus, book i. c. 199.
[2] Vispered iii. v. 18; and Khordeh-Avesta, Patet Aderbet, 18.

twenty-first fargard of the Bakô Nask. The pressure of their foreign conquerors was beginning to tell, however, upon them, for the third book of the Dînka*rd* contains a long defence of Khvêtûk-das, or marriage of near kin, that is, father and daughter, mother and son, and brother and sister; and argues, among other things, that these marriages prevent the risk of perversion of religion, keep the family undivided by conflicting ties, and produce greater love for the offspring. In the seventeenth century these incestuous marriages were forgotten, and only the tradition of the virtue of marriages between relations remained, for the Persian Rivayats, copied about that time, only advocate marriages between first-cousins, nearer unions being only vaguely alluded to as long extinct.[1]

The Parsees and Guebres keep their blood so pure that they still resemble in beauty the ancient Assyrian sculptures.[2] They never marry except among themselves, polygamy is forbidden, and divorce only allowed after seven years' barrenness. Of late years, as I have already remarked, marriages between very near kindred have been discouraged, and they have conformed to the marriage customs of the people amidst whom they dwell. In Bombay the prohibited degrees settled in 1865 are the same as the present English prohibited degrees, with the exceptions that marriage with a sister-in-law is permitted and marriage with a son's wife's mother forbidden.[3]

Chardin says of the Mingrelese, a tribe living on the east coast of the Black Sea, that they marry without scruple aunt or niece, or both at the same time. Marriage within nearer degrees is by no means rare; yet he says the Mingrelese are marvellously well made, have an admirably beautiful visage and form, a majestic air, and plenty of spirit and subtilty.[4]

[1] See *The Sacred Books of the East*, edited by F. Max Müller, vol. xviii. Translated by E. W. West. Appendix III. 8vo. Oxford, 1882.

[2] J. A. N. Périer, *Mém de la Soc. d'Anthrop. de Paris*, 1863, i. 73, 80.

[3] Dosabhai Framji Karaka, *History of the Parsis*, etc. ii. 313, 314. London, 1884.

[4] Cited by St. Lager, *Du Crétinism*, etc. p. 115.

The Afghans are divided into a great number of tribes, excessively proud of their lineage. They will hardly acknowledge anyone a member of their tribe who cannot prove his pedigree for six or seven generations. No male, with rare exceptions, marries out of his tribe; but no Afghan female will condescend to marry with a foreigner. Physically they are a hardy and robust race.[1]

The people of Beloochistan have much the same customs as their Afghan neighbours. The Kumburani males may marry foreigners, but the females are never permitted thus to defile their blood. The Brahoos are even more severe, and oblige both sexes always to marry within the tribe. The Gypsies of Beloochistan, called Luri, are still in the second stage (No. 3). They practise hetairism; the children belong to the tribe, not to individuals; and the stealing of women is usual.[2]

The Hindoos of India are divided into numberless castes, most of them with several subdivisions, and derived, according to tradition, from four original castes of the Brahmin, Kshutriy, Wys, and Soodru. At first these four castes were allowed to intermarry under certain conditions; and it is certain that the original castes did occasionally intermarry, sometimes lawfully and sometimes not, the offspring of which unions have greatly multiplied the number of the castes.[3] The Brahmins are now divided into ten distinct nations, subdivided into 1,886 tribes; the Kshutriy into 590 separate tribes. Altogether the castes, which have separate names and cannot intermarry, number at least 3,000.[4] The higher castes reckon relationship first from the same ancient sage or Rishee; and, secondly, from the same Gotr, or family stock within seven generations. Nearly all the Indian castes are now divided into nations, which are not allowed to intermarry; the nations are divided into sects, some of which do not intermarry; and no caste may now intermarry with

[1] Reich, *Ehe*, etc. pp. 240, 241; M'Culloch, *Geographical Dictionary*.
[2] Reich, *Ehe*, etc. pp. 240, 249.
[3] Steele, *Hindoo Castes of the Dekhun*, pp. xii, xiii.
[4] Hunter, *A Brief History of the Indian People*, pp. 85, 86.

another. Persons who wish to marry may not, however, be of the same Gotr, that is, direct male descent from a common ancestor, or Rishee, within seven generations; and Brahmins of the same Rishee, or descendants of the Rishee's brothers and connections within three or four degrees, may not intermarry. Mayhew gives an instance of two Rajpoot families who were not allowed to intermarry, though their common ancestor dated from eight hundred years before. Marriage with a mother, sister, or daughter is absolutely prohibited, and also with a father's sister's daughter, a mother's brother's or sister's daughter, or a sister's daughter; but these latter prohibitions are sometimes broken through poverty. In the Wys caste all cousins may intermarry; and the Komtees even permit the marriage of nephews and nieces with aunts and uncles. The Brahmunjaee, and R. Josee marry a mother's brother's daughter, and the Kykaree marry the same, but they are not allowed to marry the daughter of a mother's sister. The wife belongs to her husband's stock, and hence marriage is not prohibited between two families who are already connected by marriage; indeed marriages of this sort are preferred. An adopted son is forbidden to marry within the prohibited degrees of either his real or adopted family; and should he be re-adopted into his own family, he must not intermarry with the last, nor may his descendants for three generations.[1]

On the death of the husband, his nearest kinsman has authority over the widow if she have no son, for, like the Romans, they consider that a woman should be under perpetual tutelage. If she be not of high caste, and consequently obliged either to burn herself or lead a devotee's life, the levirate law comes into play. As soon, however, as a son is born to the family of the deceased, the kinsman must live with her as father and daughter-in law.[2]

[1] In some castes of Poona intermarriage is forbidden between *all* cousins, and with a nephew or niece on *both* sides. Steele, *Hindoo Castes*, etc. pp. 26, 27, 47, 80, 163, 346, 347; McLennan, *Primitive Marriage*, pp. 105, 106, note; Mayhew, *London Labour*, etc. ii. book iii. 119; Tylor, *Researches into the Early History of Mankind*, etc. p. 282.

[2] Steele, *Hindoo Castes*, etc. pp. 30, 31; Colebrooke, *Digest of Hindu Law*, book iv. secs. xiii. cxlvi.-cl. clvi. clvii.

The Gosawees, a devotee sect, do not marry, though females belong to the sect ; but a degenerate branch of them, the Ghurbaree Gosawee, do. These have essentially the same laws of marriage as the other Hindoos, and, though their castes permit disciples to join them, a Gosawee may only marry a woman belonging by birth to his caste, and female disciples, not by birth Gosawees, are forbidden to marry. The Gosawees are further divided into ten sects, one of which, the Geeree, are not allowed to marry among themselves.[1]

The Moondahs and Oraons of Kootea Nagpore live together, but do not intermarry. The latter are a small yet well-made race, and number in this district about 363,000. They are divided into at least ten totems, and marriage is forbidden in the same totem; indeed, it is considered the proper thing to take a wife from another village, and their marriage ceremony shows traces of marriage by capture. If, on the other hand, a girl takes up with a stranger, she has her head shaved, and her parents have to pay a fine, or else she is altogether turned out of the village. The Moondahs are divided in the same way, and have the same prohibitions.[2] The Ho are divided into over eighteen Kilis, within which intermarriage is not permitted, though they have an annual saturnalia, in which the chastity of no one is respected ; but the girls are careful not to commit themselves with anyone not of their tribe. No marriage is permitted out of the tribe.[3] The Manipurees, which term includes many tribes of Assam, the Koupúi, Lahupa, Mow, and Muram, are all Nagas and Kukis, and, though generally at war with each other, yet intermarry. They are divided into families, and marriage is forbidden within the same family.[4] The Kasias have inheritance in the female line, and have 'maintained their physical characteristics better than any other race' ; they do not intermarry n the same tribe.[5] The Garo, who inhabit the extreme

[1] Steele, *ut sup.* pp. 444, 445.
[2] Dalton, *Ethnology of Bengal*, pp. 245, 248, 254 ; Watson and Kaye, *People of India*, vol. i. No. 15.
[3] Dalton, *ut sup.* pp. 185, 189, 197, 205.
[4] *Ibid.* pp. 48, 53 ; Sir J. Lubbock, *Origin of Civilisation*, p. 133.
[5] Dalton, *ut sup.* pp. 54, 56.

north-western part of the mountainous tract that lies between Cape Negrais and the Bramaputra, are divided into clans which are subdivided into totems, within which intermarriage is prohibited. Among the higher classes it is the rule for two particular clans to intermarry continually, and since relationship is only recognised through females, the closest intermarriage is customary. Marriage out of the tribe, even with a slave, is prohibited.[1] The Kacharis, which include the Bodo, Mech, and Dhimal tribes of the eastern frontier, have symbols of marriage by capture. The Dhimals and Bodo, though few in number, and living in the same districts, do not intermarry.[2] The Pani-Koch, closely allied to the Mech, now number about 1,000,000. Inheritance is through females, and marriage is of the Mota class.[3] The Parheyas and Boyás neither intermarry nor eat together.[4] The Bhúiyas, a tribe scattered over Bengal, but chiefly in the district of Singbhúm, do not usually marry in their own village, but slips in morality by the girls are not thought much of, provided they occur in their native village.[5] The Juangs are divided into tribes, which are exogamous.[6] The Korwás, originally a mixed tribe, allied to the Moondahs and Oraons, lead a savage and nomadic life in ths hills, which is not favourable to the increase of population. They marry among themselves, though they number but some hundred and twenty families. Two of these families—the two most prosperous—refuse to intermarry with any others, and have continued interbreeding for many generations. There are no tribal divisions restricting marriage between near relations.[7] All that is known of marriage restrictions among the Malers, Hill-men of Rájmahál, is that 'near relations' are forbidden to intermarry. They formerly were accustomed to capture wives from the plains, but do not seem to acknowledge relationship through women, for sisters' children take no share in an inheritance.[8] The Kandhs, or Khonds, live chiefly in Orissa and have, with the exception of the Boad Kandhs, always intermarried with strangers. They are divided into

[1] Dalton, *ut sup.* pp. 58, 63.
[2] *Ibid.* pp. 86, 87.
[3] *Ibid.* pp. 91, 92.
[4] *Ibid.* p. 134.
[5] *Ibid.* pp. 142, 143.
[6] *Ibid.* p. 158.
[7] *Ibid.* pp. 221–224, 229.
[8] *Ibid.* pp. 273, 274.

two sects, those who worship Búra and those who worship Tári, and, until interfered with by the English, the worshippers of the latter used to propitiate her with human sacrifices, often people of their own tribe bought as children from their parents, but oftener kidnapped strangers, adults or children, who were kindly treated until sacrificed. If one of these had intercourse with the daughter of a Kandh it was considered a distinction. The daughter of a Kandh was, however, an expensive article as a wife, which was partly caused by the great prevalence of female infanticide, and partly caused the infanticide, because the male relatives of a girl are bound to compensate her husband if she behaves badly—and as a rule, owing to the scarcity of women, she does behave badly. In all probability, the Kandhs were formerly divided into exogamous tribes living in different villages, and even now that they are all mixed up together, and though a girl of a different tribe may live in the same street, it is still considered 'more dignified to go to a distance for a wife.' Chastity before marriage is not rigidly enforced, and we seem to have here the traces of communal marriage with individual marriage with captives.[1] The Boad Kandhs will not intermarry with other races, do not practise infanticide, and hence there is little difficulty in obtaining a wife.[2] The Pádam Abors, probably nearly allied to the Tibetans, 'view with abhorrence the idea of their girls marrying out of their own clan, and I was gravely assured,' says Dalton, 'that when one of the daughters of Pádam so demeans herself, the sun and the moon refuse to shine, and there is such a strife in the elements that all labour is necessarily suspended, till by sacrifice and oblation the stain is washed away.'[3] Among the Miris, nearly allied to the Abors, polygamy exists among the rich and polyandry among the poor. Brides are bought, but there is an annual saturnalia in every village, with unlimited licence, during which apparently no relationship is respected, and if couples suit each other they pair off and marry.[4] The Sonthals have the same custom.[5] The Boksas of the Terai only marry within

[1] Dalton, *ut sup.* pp. 285-295; Brown, *Indian Infanticide*, p. 212.
[2] *Ibid.* pp. 299, 300. [3] *Ibid.* p. 28.
[4] *Ibid.* pp. 29, 33. [5] Watson and Kaye, *People of India*, vol. i. No. 1

their own tribe, but have no other restrictions.[1] The Gonds and Bygars of the Sathpuras have a right to their cousin's hand, as among the Bedouins, especially when the brother's child is a daughter, and the sister's a son. But a girl may choose any one of her cousins, either by anointing his head with turmeric or sitting down in his house, in which case any one of her male cousins has the right to carry her off if he can.[2] The same is the case with the Yerkala of Southern India. A cousin pays less than any other suitor, or gets part of the dowry if he foregoes his claim.[3] The Moplahs, a people who live on the Beypore River, and originally descended from Arab-Indian half-castes, now always intermarry among themselves. They are described as active, keen in trade, industrious agriculturists, and so brave that no Sepoy troops will face them.[4] The Nuts, a tribe of Gipsy thieves, acrobats, and dancers, like all Gipsies, only marry among themselves.[5] Even many of the Mohammedans follow the general tendency to form exclusive communities. The Mulliks of Behar, the Pathans of Bareilly, and the Soonee snake-charmers form castes apart, and only intermarry among themselves.[6]

In Ceylon the ruling tribes peremptorily forbade marriage into a lower caste, as among the Hindoos. It is said that under the native kings first-cousins were forbidden to intermarry; but this was probably only on one side, for they see no harm in incest.[7] The aboriginal population, the Weddas, are the lowest race still existing in the country, and now number only some four hundred jungle Weddas, besides the semi-civilised ones, who have mixed a good deal with their neighbours. They are neither polygamous nor polyandrous, women are quite subject to their husbands, and hence relationship may be through males. Marriage is allowed with daughters and sisters, but not with elder

[1] Watson and Kaye, vol. ii. No. 108.
[2] Fison and Howitt, *Kamilaroi*, p. 154.
[3] Lubbock, *Origin of Civilisation*, p. 143.
[4] The *Times*, December 28, 1875.
[5] Watson and Kaye, *ut sup.* vol. ii. Nos. 105, 110.
[6] *Ibid.* vol. i. No. 4; ii. 104*a*; iii. 121.
[7] Mayhew, *London Labour*, etc. vol. ii. book iii. pp. 126, 127

sisters. Nevertheless they rejoice in a perfectly Arcadian morality: 'They think it perfectly inconceivable that any person should ever take that which does not belong to him, or strike his fellow, or say anything that is untrue.'[1]

'The king of Burmah,' says a correspondent of the 'Times,'[2] 'always marries at least one of his half-sisters, although such marriages are forbidden among his subjects,' to secure the purity of the royal blood. Nevertheless, since the king is not restricted to his half-sisters, the royal blood is not kept pure. Theebaw, the last king, was the son of the seventh in rank of his father's wives, a half-breed of one of the wild Shan tribes on whom the Burmese have constantly raided for wives. Theebaw himself intended to marry two of his half-sisters, both daughters of one mother, but the elder refused him, and escaped to a monastery; the younger married him, governed him, and prevented him from having any more wives.

Bowring asserts that marriage is not permitted within the seventh degree (nearer than third-cousins) of blood relationship among the commoners of Siam, but that the king may marry his sister or his daughter.[3] Loubère narrates the facts more clearly; he says that in his time the king of Siam married his sister, and then his daughter, the issue of that marriage.[4] Yet Dr. Campbell tells us of the Siamese that 'B dying, a few of his widows might be asked to join the hareem of A; and on A's death his heir might retain a few of the widows of A and B. A son in this way may espouse his step-mother or step-aunt, or his niece.'[5] They have no prejudice against consanguineous marriages, nor do they believe that the offspring suffer from them.

Martinus Martinius tells us that up to the time of Fu-hi, B.C. 2952,[6] the Chinese had no idea of incest, and practised

[1] Hartshorne, 'The Weddas,' in the *Fortnightly Review*, new series, xix. 406–417.

[2] The *Times*, November 18, 1878, and December 19, 1885.

[3] Tylor, *Researches into the Early History of Mankind*, p. 283.

[4] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 218.

[5] Dr. J. Campbell, in the *Journal of Anthrop.* London, Oct. 1870, p. 196.

[6] Reich, *Ehe*, etc. p. 189. Mr. Tylor gives this date as B.C. 2207 (*Researches into the Early History of Mankind*, p. 282).

promiscuosity. Fu-hi first separated the sexes, instituted marriage and marriage laws, and prohibited marriage between persons bearing the same family name. The number of their family names, according to Davis, is not more than 100, but others say 300, or even 1,000. Fu-hi himself is said to have divided them into 100 clans, giving each a name.[1] Marriages between persons of the same family name are not only null and void, but punishable by death. Blood relationship is reckoned through females. A man may not marry his cousin on the mother's side ; nor his aunt, the sister of his mother : but folk-stories (the best test of popular sentiment) do not bear out the assertion that marriages between first-cousins on the maternal side are absolutely prohibited in these times,[2] although there appears to be still a sentiment against it. This may indicate a transition stage between the matriarchal and patriarchal forms. A man may marry an adopted daughter, but she must first be adopted, as a sort of legal fiction, by a family of a different name. Marriage with a step-daughter is forbidden.[3] There seems, however, to be no foster relationship,[4] or relationship by marriage, for the late emperor of China married his wife's aunt.[5] Play-actors, police, boatmen, and slaves, each form castes which may not by law marry outside their caste ;[6] yet the boat-population increases rapidly, and the females are vastly superior physically to their sisters who live on land.[7]

Kojiki, or the ' Records of Ancient Matters,'[8] shows us that the ancient Japanese practised hetairism, and that unions took place with half-sisters, step-mothers, and aunts. Polygamy was practised, but the chief wife was superior to the others and bore the significant title of 'younger sister.' Endogamy was

[1] Tylor, *ut sup.* pp. 282, 283.

[2] See H. A. Giles, *Strange Stories from a Chinese Studio*, stories Nos. xv. and xcv. i. 106 ; ii. 158.

[3] Giles, *ut sup.* ii. 156, note 6 ; J. H. Gray, *China*, i. 186.

[4] Gray, *China*, i. 154, 155.

[5] One of his wives was the sister of another wife's father. See the *Times*, May 16, 1872.

[6] Gray, *China*, i. 187.

[7] *Ibid.* ii. 282, 283 ; and C. F. Gordon-Cumming, *Wanderings in China*, i. 82.

[8] *Transactions of the Asiatic Society of Japan*, 1883, vol. x. supplement. By Basil Hall Chamberlain.

strictly practised, nor could the different classes intermarry until lately. Subsequently Chinese marriage law was introduced with Chinese civilisation and letters.[1]

In Cambodia, according to Dr. Mondières, the higher classes marry their sisters, as among the ancient Egyptians and Persians. A missionary also informed him that among the Annamites marriages between father and daughter, and even between mother and son, are far from rare. A Cambodian will marry an Annamese woman, but the converse never occurs, since the former consider themselves to be the superior race.[2] In Chinese Turkestan every marriage is permitted, save in the direct ascending or descending line.[3]

Among the Mongols, according to the Russian monk Hyacinth, marriage with a woman related on the paternal side is considered incestuous; but there is no relationship through the female side. A man may marry three sisters at once, and two families may intermarry for centuries.[4]

The Mantchu Tartars have just the opposite regulations as the Chinese. Marriage is forbidden between persons of different family name.[5]

The Tunguz, according to Mr. Tylor, prohibit marriage between second-cousins; but he says no more about them.[6]

The Jakuts are not allowed to take a wife from their own clan;[7] and the Ostyaks are forbidden marriage either in the ascending or descending line of their wife's relations, or even with a brother's widow; but it is considered an honourable thing to marry several sisters at once, and, as among other peoples, a woman is sold to her brother-in-law at a cheaper rate. The wife takes her husband's name, and no one may marry a woman of the same family name as himself. Hence a man may marry his sister's daughter; and every union is

[1] Griffiths, *The Mikado's Empire*, pp. 93, 552.
[2] Mondières, 'Renseignements sur la Cochin-Chine,' in the *Bullet. de la Soc. d Anthrop. de Paris*, second series, 1875, x. 118.
[3] St. Lager, *Études sur les Causes du Crétin*, etc. p. 115.
[4] Reich, *Ehe*, etc. p. 245.
[5] McLennan, *Primitive Marriage*, p. 146.
[6] Tylor, *Early History*, etc. pp. 283, 284.
[7] Sir John Lubbock, *Origin of Civilisation*, p. 135.

lawful, provided the father or deceased husband of the woman had a different name from the person who wishes to marry her.[1]

The whole of the Samoyed nation is divided into three tribes, and intermarriage in the same tribe is forbidden. Since these tribes live generally in parts of the country far remote from each other, young men have to go great distances in search of a wife.[2]

The Kalmucks have a great abhorrence of marriage between near kin, and their wives must always be three or four degrees removed. Nobles must marry the daughters of nobles of a different stock ; and, though a proverb of theirs says that 'great folks and dogs know no relationship,' it is only in consequence of the occasional marriage of a noble with his sister-in-law.[3] The Kalmuck population is now diminishing ; the number of women especially is very disproportionate to the men, there being only 51,000 women to 68,000 men. That they diminish, is attributable to the great mortality among the children ; for though very few Kalmucks remain unmarried, and every mother has on the average four children, only two as a rule reach maturity ; partly because in some places the people feed on fish, and have neither pastures nor herds, and partly because of female infanticide.[4]

Like most of the Tartar races, the Kirghiz and Nogais may not marry in their own clan.[5]

The Lapps never marry a girl descended from the same common parent as themselves, however distant the relationship may be.[6]

The Malays have no relationship excepting through females. When a man marries, he follows his wife : she

[1] Sir John Lubbock, *Origin of Civilisation* ; and Mayhew, *London Labour*, etc. vol. ii. book iii. pp. 168, 170.

[2] McLennan, *Primitive Marriage*, pp. 102, 103 ; Tylor, *Researches into the Early History of Mankind*, p. 284 ; Sir J. Lubbock, *Origin of Civilisation*, etc. p. 135.

[3] McLennan, *ibid.* pp. 98, 99.

[4] *Pall Mall Gazette*, May 29, 1874 ; and J. Deniker, in the *Revue d'Anthrop.* vii. 288, 289, 291, 292. Paris, 1884.

[5] McLennan, *Primitive Marriage*, p. 103. Du Perron, talking of the marriage of cousins being considered by the Parsees as 'l'alliance la plus recommandée,' adds in a note, 'Le même usage a lieu chez les Tartares' ; but he does not say which. See his *Trans. of the Zendavesta*, ii. 556, note 3.

[6] Tylor, *Early History of Mankind*, p. 284 ; Reich, *Ehe*, etc. p. 281.

still belongs to her own family, and so do all her children. The children acknowledge some relationship on the father's side, but not beyond the third degree, and that only in the direct ascending and descending line. No one is allowed to marry into his own family ;[1] hence a man may not marry any relative on his mother's side, but he is allowed to marry his half-sister, his niece, his aunt, or more distant relatives on the paternal side.

The people of Benkulen, the Palembang, and Lampong have much the same marriage customs as the Malays proper ; but the Batta have relationship through males. Hence, though they may not marry into their father's family, they marry into their mother's family in the same close degrees. If a wife does not bear male children, her husband may send her back and demand her sister instead ; yet infanticide is not practised.[2]

The Kalang of Java never marry a daughter to anyone who cannot prove his descent from her particular stock.[3]

In the island of Bali the Hindoo religion exists in great purity, with division into castes, as in India.[4] From which I presume that they have the same marriage prohibitions as the Hindoos of India.

In Sumatra marriage with cousins is permitted. Incest is held to be an offence ; but unless it occurs in the first degree it is considered to be rather an infraction of a conventional rule than of natural law. Sometimes it is punished by a fine, and sometimes the parties remain together.[5]

Among the Dyaks of Borneo much immorality prevails, as is the case in nearly all the large islands by the sea ; yet Dyak girls seldom intermarry with foreigners, or even Malays. The Hill Dyaks are still more strict. Even the marriage of first-cousins is prohibited, and second-cousins may only marry on payment of a jar, a severe fine for them. Ruin and darkness had descended on the land, said they, when one of them

[1] Waitz, *Anthropologie*, vol. v. part i. pp. 141, 142.
[2] *Ibid.* pp. 147–150, 186, 187, 190, 191.
[3] Sir J. Lubbock, *Origin of Civilisation*, p. 144.
[4] Waitz, *Anthropologie*, vol. v. part i. p. 40.
[5] Mayhew, *London Labour*, etc. vol. ii. book iii. pp. 101, 102.

married his grand-daughter ; and it had remained so ever since. Yet they always marry in their own tribe, and are therefore all blood relations.[1]

The State of Wajo is perhaps the most advanced on the Celebes, and here a high spirit of caste prevails. As usual in these cases, women alone do not dare to marry into a lower caste, while the men may.[2]

Arago asserts that on the Caroline Isles it is customary for brothers to marry their sisters. Gerland, however, is inclined to doubt this, on the authority of Chamisso, who says that the marriage customs on the Carolines are the same as on Ponape,[3] where first-cousins are forbidden to intermarry. It is customary for widowers to marry their deceased wives' sisters, and widows to marry their deceased husbands' brothers. Rank was always inherited through the mother. The people of the Eastern Carolines were divided into classes, which were not allowed to intermarry ; and, as in other islands, the chiefs were all members of that society known elsewhere as the Areoi, who alone were permitted to practise incest.[4]

On the Marianne (or Ladrone) Islands the people are divided into three classes, the Matuas, Atshaots, and the Mangatshangs ; or nobles, gentlemen, and common people. Besides other disabilities, the lowest class never intermarry with the nobles, nor was there any intermixture of blood between them. The latter were a far superior race to the former, who were liars, faithless, and inhospitable. A wife here had extraordinary power. All her children, even those which were not her husband's, were considered legitimate ; all relationship was on the female side ; but the relationship to a female was nearest on the male side, or relatives would be near in the following order : paternal aunt, maternal aunt, maternal uncle, paternal uncle. No marriage could take place between very near relatives on the female side, but, as in all the Micronese Isles, the chiefs belonged to the

[1] Mayhew, *London Labour*, etc. vol. ii. book iii. p. 103 ; Tylor, *Early History of Mankind*, p. 283. [2] Mayhew, *ut sup.* p. 107.

[3] Ascension Island, or Seniavin. Some day, perhaps, these islands in the Pacific will have dropped a few of their superfluous names.

[4] Waitz and Gerland, *Anthropologie*, vol. v. part ii. pp. 106, 108, 121.

society of Arcoi, called here Ulitaos, and could practise incest without hindrance.[1]

The inhabitants of the Radack and Ralick chains, forming the Marshall Islands, are divided into several clans. Here also relationship is through females only. Their customs are much the same as on the other groups.[2]

The Polynesians count relationship through the female line, the husband taking the wife's name. In most cases girls lived a free life before marriage, and polygamy was everywhere common. Throughout Polynesia existed a sort of spiritual relationship, a custom of exchanging names with a great friend, who thus became another self, and who shared his wife with, and might not marry a blood relation of, his friend. Wilson asserts that marriages with blood relatives were everywhere avoided; but they do occur from political motives, nevertheless, among the chiefs and nobles. Thus Tamehameha married a relation, while his son married a sister, and, from love to his father, one of the latter's widows. The wives of chiefs throughout Polynesia were the equals of men, but all other women, except on certain occasions, were *noa*, or common to all. They had a curious society called the *Areoi*, which we have already had occasion to notice, who were a fraternity of nobles, with branches in many of the islands, living like beasts in promiscuous intercourse. All the unmarried, widowed, or separated women belonging to the society could have as many lovers as they liked; and the offspring of these unions, if females, were killed at birth; if males, the first-born alone were sacrificed, and the rest might be saved. Besides in Tahiti, the Areoi were to be found in Raratonga, Nukuhiva, Hawaii, in the Carolines, and in the Mariannes. The mythology of the Polynesians makes the year bear months by her own father. An old legend, again, makes Taaroas take to wife his daughter, or by some accounts his sister Hina; their son married his mother or grandmother Hina, who became young again, and by her became the father of Ouru and Fana, from whom mankind are descended.

[1] Waitz and Gerland, *Anthropologie*, vol. v. part ii. pp. 107, 111–113, 148.
[2] *Ibid.* pp. 105, 106, 111, 121, 122.

Infanticide is everywhere very prevalent. Indeed in Hawaii, owing to the practice of female infanticide, there are far more males than females, but infanticide of both sexes is largely practised.[1]

In Tahiti as many as two-thirds of all children born were murdered, though chiefly females ; and all children of mixed unions were killed, especially when the mother was of higher rank than the father ; for the Polynesians consider that there are two races of men, one of heavenly, the other of earthly origin ; hence mixed unions were considered a defilement of heavenly blood, and the children must not live. It is a rule however, not to marry among kindred, from which I presume they do not marry among relatives of their mother's, for everywhere inheritance goes though the female line. The great chiefs belonging to the Areoi alone were allowed to keep their eldest son ; while the upper-class Areoi were obliged to kill their eldest son and all their daughters ; and the rest of the Areoi were obliged to kill all their children. In Tukopia, on the other hand, boys are frequently killed from a fear that the island may become overcrowded, while girls are sometimes saved because of the practice of polygamy.[2]

In the Markesas, as elsewhere in Polynesia, the succession is through females, and the princesses were allowed to practise polyandry. In Hawaii, Nukuhiva, and Tahiti it is customary for the princes to marry a sister.[3]

In Tonga marriages between relations were usual. Infanticide was also largely practised, chiefly as a sacrifice during a parent's illness, those being preferred who were born from mixed marriages or from parents of different rank. Inheritance went through females, and this was pushed to so ridiculous an extreme that the eldest sister and the aunts of the Tuitonga, together with their children, were considered

[1] Waitz and Gerland, *Anthropologie*, vol. v. part ii. p. 111 ; vi. 122, 222, 123, 127, 130, 131, 348, 366, 137, 138, 233, 234, 321, 322, 139, 140 ; Reich, *Ehe*, etc. p. 353 ; J. A. N. Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1860, i. 218.

[2] Waitz and Gerland, *Anthropologie*, vol. v. part ii. p. 191 ; vi. 113, 139 219 ; Gerland, *Aussterben der Naturvölker*, p. 55.

[3] Gerland, *Aussterben der Naturvölker*, p. 46 ; Waitz and Gerland, *Anthropologie*, vi. 215, 216.

more holy than the Tuitonga himself; while his daughter was so holy that though she virtually practised polyandry she could not enter into wedlock, and her daughter was even more holy than she herself.[1]

In Samoa marriage between near relatives on the female side is not allowed.[2] In Vate, or Sandwich Island, they seem generally to marry into a different family, though these families are usually hostile to each other.[3] On the Nitendi (or Santa Cruz) group, the Salomon Isles (including Bougainville, Choiseul, Isabelle, and Malayta), Tanna, and the islands of Torres Straits, the custom of exchange of names is universal. The populace of most of these isles is divided into families, who are hostile and do not intermarry.

In Fiji they are still in the matriarchal stage, the system of marriage being in the form of communal hetairism, modified by totem restrictions (Stage III. No. 7). But, though rank descends through females still, relationship is in some parts reckoned through males, and therefore the transition stage has already begun. Formerly the chiefs had great power, and every man whose mother was a member of some chieftain's family might travel about from isle to isle, and take any woman or property he liked, provided neither she nor it belonged to any other member of this privileged class. But no chief could be legitimate who was descended from a captive wife, even though she were of superior rank to himself. The chiefs are bigger than the common people, 'over six feet in height, and superbly limbed.'[4]

Great opposition is made in New Zealand to any one who wishes to take a wife from another tribe unless it be for a political purpose. Marriages are not usual between brother and sister; but a man may marry several sisters at the same time, or he may marry first-cousins; and altogether marriages between near kin are far from uncommon. Mr. McLennan was, however, of opinion that at one time the people must have

[1] Waitz and Gerland, *Anthropologie*, vi. 131, 138, 171, 177, 178.
[2] *Ibid.* p. 127. [3] *Ibid.* pp. 639, 657.
[4] *Ibid.* pp. 622, 657, 663; Fison and Howitt, *Kamilaroi*, pp. 143, 145, 159; Cooper, *Coral Lands*, i. 118; ii. 18, 153; C. F. Gordon-Cumming, *At Home in Fiji*, i. 281.

been exogamous, since in the 'Curse of Mania' there is an instance of a child fleeing from the tribe of its birth to that of its mother.[1]

The general state of health in all Polynesia and in New Zealand was very good at the time they were first brought under European notice. Dieffenbach found in the inner part of New Zealand some cases of club-foot; Hasenscharte saw cases of hereditary polydactylism; and Beechey saw the same in Mangareva. Thompson even asserts that malformations of this kind are as common in New Zealand as in England; but he refers only to the coast, where the health of the people had suffered much. Malformations were most frequently found on the Sandwich Isles, where King saw crooked persons, a young man without feet or hands, many who squinted, and a man who declared his blindness was congenital. They were rarest on the Markesas. Albinoes were seen on all the islands, and madness was not unknown; but the chief epidemic diseases were first brought by Europeans. Of all diseases that they were subject to before the arrival of Europeans, those affecting the skin were the most common—such as ichthyosis, elephantiasis, irruptions, and boils; but in New Zealand boils were not common, and most of the diseases were cured simply by salt. Scrofulous glands and sores were common in Tonga, and in both Tonga and Uevea the children suffered much from malignant pustules—an affection which disappears of itself at nine years of age. The Tongese also had occasionally a mild inflammation of the eyes. Nevertheless the people are healthy, as a rule; disease is uncommon, and nature's power for healing is here exceptionally strong. There is one disease which is peculiar to the nobles, who alone are allowed to drink an intoxicating liquor called *cava*. Cava-drinkers suffer first from weakness and torpor; and if they continue the habit of drinking they grow thin, their eyes inflame, they get an irruption, which is marked at first by the appearance of a white scurf, then the

[1] Waitz and Gerland, *Anthropologie*, vi. 131, 138; McLennan, *Primitive Marriage*, p. 125; Sir J. Lubbock, *Origin of Civilisation*, p. 144; Mayhew, *London Labour*, etc. vol. ii. book iii. p. 72; Adam, *Fortnightly Review*, 1865, p. 720.

skin tightens and cracks, and leaves a large cicatrix on healing, which is looked upon as a mark of honour, because it is a mark of nobility. Persons who have sufficient self-control to break themselves of this pernicious habit speedily and entirely recover.[1]

The Polynesian women are remarkably fruitful ; Cheevor saw a woman in Hawaii who had twenty-five children ; Forster gives many examples of great fertility from Tahiti ; and Dieffenbach tells us that in New Zealand all marriages are fruitful, and twins are frequently born. It is the same in Tonga, Tukopia, and Samoa. Nor is the general viability lower than in Europe, while the old are free from that decay which so often accompanies old age in civilised countries. They are of medium height, well formed, but those who are badly fed and have to work hard are not so fine a race as the nobles, who are to the workers as giants to dwarfs.[2] Hale describes the former as of colossal build, stout, proud, brave, and impudent ; the latter, he says, are thin, poorly, timid, and servile. In Niva, the usual way in which a chief disposes of his captives is to break their backs across his knee. Indeed everywhere the chiefs are both finer physically and better taught than the common herd, and this is due to their superior nourishment and immunity from labour, not, as we might perhaps be led to believe, because the chiefs alone may contract incestuous unions. For the same reasons, the women do not generally grow up to be handsome ; but all writers agree in the splendid build of most Polynesians, a build often rivalling the finest statues of antiquity. It varies somewhat on the different islands : on the higher ones the inhabitants are bigger, stronger, whiter, and better developed ; and the opposite is the case under reversed circumstances.[3] Now,

[1] Waitz and Gerland, *Anthropologie*, vi. 24, 25, 60.

[2] We may perhaps trace a similar state of things among the ancient Egyptians, who always distinguish their chiefs in their wall pictures by their superior size. Were the Polynesians to draw themselves they would infallibly distinguish their nobles in the same way.

[3] Waitz and Gerland, *Anthropologie*, vi. 2, 6, 25, 26, 203, 542, 544; v. part ii. pp. 47, 49, 55, 56, 113, 171, 173, 174, 193. M. Chipault, indeed, talks of disease in Isabelle Island, Guam, Amboyna, Tahiti, and Barabora, as resulting from consanguineous marriage (*Étude sur les Mars. Cons.* pp. 82, 83). The evidence against this supposition, based as it is on very slight authority, is overwhelming.

indeed, all is changed; disease is common since intercourse with Europe has been established, and the character of the natives is much corrupted and debased.[1]

The prohibited degrees among most of the Australian tribes are at first sight extremely complicated. Nevertheless, owing to the careful study of a succession of workers, and especially of Messrs. Fison and Howitt, they will be found to fall easily into our table of the development of marriage law, and to offer no exception to the general law of development. Taken as a whole, they are in the third stage; hetairism is universal, but strictly modified by totem restrictions; and, what is chiefly remarkable, widely spread, and sometimes hostile tribes acknowledge their common relationship and common rights to wives. The simplest form of their prohibited degrees may be exemplified in the Mount Gambier tribe, who are divided into two classes or families, named Kumite and Kroki respectively. No man may marry within his own class, that is, a Kumite may not marry a Kumitegor (*gor* being the feminine suffix), or a Kroki a Krokigor; but since relationship is only through females, a brother and sister's children belong to different classes, and may intermarry, while the children of sisters may not. Other tribes divided into two classes are those of the Darling River into Kilpara and Mukwara; those of Banks Islands; and those of New Britain into Pikalaba and Muramura.

In the same way the Kamilaroi (which is a generic term, including a great number of tribes 'who speak Kamil') are divided into two *pairs* of classes:—

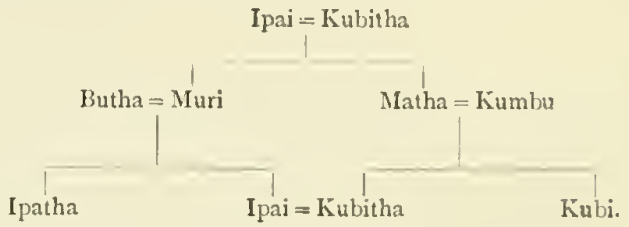
Ipai and sister Ipatha Kumbu and sister Butha	may only marry with	Kubi and sister Kubitha Muri and sister Matha

Ipai marries Kubitha; and Ipatha, Kubi; Kumbu marries Matha; and Butha, Muri.

The children, however, do not take the mother's name, but the name of the others in the mother's pair, the children of

[1] Waitz and Gerland, *Anthropologie*, vols. v. and vi. generally.

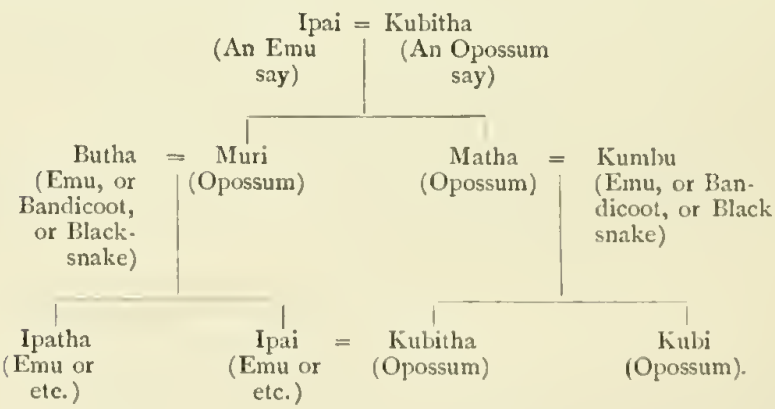
a Kubitha mother being Muri and Matha, for instance; with the result, as before, that the children of a brother and sister may marry. Thus:—



These classes are further subdivided into totems, children always belonging to their mothers' totem. These are:—

Emu, Bandicoot, Blacksnake	totem or family which may only intermarry with	Kangaroo, Opossum, Iguana

But this does not affect the marriage prohibitions; for, since the family name or totem always descends through females, an Emu, to take an example, is always an Emu on the female side; each triplet of totems belongs to each pair of classes, and hence every Ipai and Kumbu must be an Emu, Bandicoot, or Blacksnake, while every Kubi or Muri must be a Kangaroo, Opossum, or Iguana; and no sort of further restriction is put therefore upon intermarriage. Thus:



Other tribes have the same regulations. Thus, the Antakeringa tribe of Central Australia is divided into—

Bultara and sister Bultara, Parula and sister Parula	who may only marry	Kumura and sister Kumura, Panangka and sister Panangka

the children of a Bultara-Kumura marriage being Panangka, and those of a Kumura-Bultara marriage, Parula, similar to the Kamilaroi rule. The tribes of West Australia, also, are divided into Paliali, Poronga, Kimera, and Banaka, the feminine terms being the same. On the Herbert River the Queensland natives are divided into Tarawang, Bunda, Bulgowang, and Barang, the feminine terms being the same, with the suffix *an*.[1]

In all probability, all these tribes were originally only divided into two classes, as the Kroki and Kumite, and the original terms have been lost. In the case of the Kamilaroi there is reason to believe they were the same as those now found on the Darling River, namely, Kilpara and Mukwara ;[2] indeed, among the natives of Mackay, Queensland, there is an instance of the retention of the class names with the subdivisions :— [3]

Yungaru		Wutaru
	divided into	
Gurjela, Burbia	(with feminine suffix *an*) may only marry with	Kuberu, Wungo

Variations in the Kamilaroi system occur in places ; thus, among the Wonghi, an Ipai, for instance, marries a Matha, not a Kubitha ; and his children are Kubi and Kubitha.[4] The Kurnai, too, show a special form, which the genius of Mr. Fison shows may be deduced from the Kamilaroi rule. These people, one of the chief tribes of Gippsland, are divided into two classes, called Yeerung and Djeetgun ; but instead of, as elsewhere, these class names representing totems or tribes, all males are Yeerung, and all females Djeetgun. Now Mr. Fison supposes that originally there were two intermarrying tribes of these names, in which case, since no Yeerung man could marry a Yeerung woman, all the married males in one tribe would be Yeerung, and all the married females Djeetgun, while in the other tribe the reverse would be the case. Suppose, however, that one of these two tribes became exter-

[1] For the above I am indebted to Fison and Howitt's *Kamilaroi*, pp. 33-43.
[2] Cameron, 'Notes on some Tribes of New South Wales,' in the *Journal of the Anthropological Institute*, xiv. 351, for May 1885.
[3] Fison and Howitt, *Kamilaroi*, p. 38. [4] Cameron, *ut sup.* p. 350.

minated, or that one of them became isolated. At that moment the surviving or the isolated tribe would be composed of, say, Yeerung married males, and Djeetgun married females, while all the children—since relationship is through females—would also be Djeetgun. The consequence would be that none of the children could marry, since all bore the same name. What the Kurnai actually do is to call all the males by one name, and all the females by the other; and, further, they adopt capture as the regular form of marriage; whereas actual capture or elopement is only usual among the Kamilaroi in cases considered to be incestuous. Mr. Fison therefore considers that this fiction and custom were forced upon them by their circumstances, and he gives many other arguments in support of his view.[1] In course of time the Kurnai have become divided into many tribes, inhabiting different districts, some of which intermarry and some do not.[2]

The Gournditch-mara tribe of Western Victoria are divided into four clans, named *Water*, *Mountain*, *Swamp*, and *River*. There are no restrictions on marriage between any of the clans, and even in the same clan marriage is allowed. Relationship here is through males.[3]

The Turras of York Peninsula, South Australia, though divided into Wiltu and Multa, and forbidding marriage within the clan, exchanged wives at their corroborees.[4]

The Macadamas of Cape York, North Australia, have no idea of relationship whatever, according to a Frenchman named Pelletier, who was wrecked there as a boy, and remained amongst them for seventeen years. The word which means woman also means sister or daughter. A modified promiscuity is practised, on the same system as the gorilla or lion, each man taking what women he can.[5]

The Kulin of North-western Victoria have a system very like the Kurnai—a division into two classes which are merely sexual, all the males belonging to one, and all the females to

[1] Fison and Howitt, *Kamilaroi*, pp. 297 305.
[2] *Ibid.* pp. 227-229.
[3] *Ibid.* pp. 275, 276.
[4] *Ibid.* pp. 284-286.
[5] See the *Times* for July 21, 1875.

the other. There are besides fourteen family names or totems, any one of which may intermarry with the other. Much the same arrangement is also found among the Narrinyeri tribe of South Australia.[1]

The Ikula, of the southern part of the boundary between West and South Australia, are divided into four classes—Budera, Kura, Budu, and Wenung. When the two first intermarry, the males take the name of the father, and the females that of the mother, as among the Kurnai; and similarly when the two last intermarry. But the two first seem to be superior to the two last in rank, and though the Budera male may marry a Wenung woman, girls as well as boys take the father's name. In the same way a Kura male may marry a Budu woman, and his children of both sexes take his name. But neither a Budu nor Wenung male may marry into the upper classes; nor can a Budera marry a Budu woman, nor a Kura marry a Wenung woman.[2]

The Kunandaburi, of Cooper's Creek, are divided into two classes, the Mattara and Yungo, which intermarry. Marriage is, however, forbidden between first-cousins or nearer relatives. Like the Kurnai, Narrinyeri, and others, they still retain traces of promiscuity at the ceremony of marriage, in which neither class nor kinship is any bar.[3]

These various systems are all explicable, as I have said, by the system of capture, developed from a previous state in which promiscuity was practised. Of the first the Macadamas of Cape York are an example. Of pure exogamy the systems represented by the Kumite and Kroki, or Kilpara and Mukwara, are examples. But an explanation of the compound system of the Kamilaroi is not so easy. Mr. Howitt gives one indeed which, though doubtfully advanced and subsequently withdrawn,[4] is very possible in itself, and consonant

[1] Howitt, 'Notes on the Australian Class Systems,' in the *Journal of the Anthropological Institute*, xii. 507.

[2] *Ibid.* p. 509.

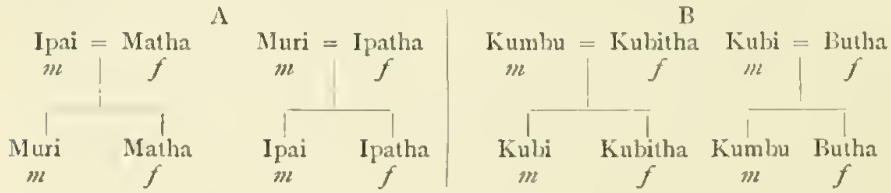
[3] Fison and Howitt, 'Mother-right to Father-right,' in the *Journal of the Anthropological Institute*, xii. 35, and note, pp. 36, 37.

[4] Fison and Howitt, *Kamilaroi*, pp. 70 *et seq.*; and Howitt, 'Notes on Australian Class Systems,' in the *Journal of the Anthropological Institute*, xii. 499–504.

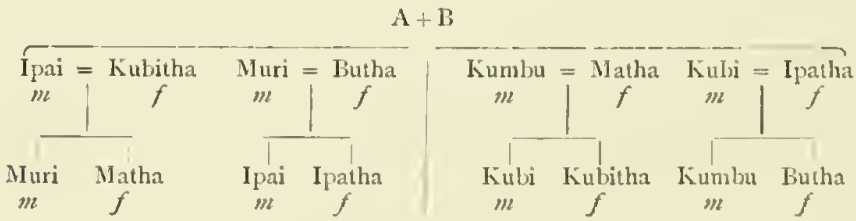
with analogy and the customs in other parts. His theory is this: Given two original tribes, A and B, each divided into two classes—

A into { Ipai (*m*) Ipatha (*f*) / Muri (*m*) Matha (*f*) } B into { Kumbu (*m*) Butha (*f*) / Kubi (*m*) Kubitha (*f*) }

just as we actually find a tribe divided into Kumite (*m*), Kumitegor (*f*), and Kroki (*m*), Krokigor (*f*). Let them also have relationship through females, also like Kumite and Kroki. Then we have—



So far there is no theory. But now suppose the A and B tribes, for some reason or other, unite, and, to cement their friendship, exchange wives, as is not uncommon among other savages, and as was the case with the Minyæ and Lacedæmonians, according to Herodotus.[1] We suppose, therefore, that Ipai and Kumbu exchange wives; that Muri and Kubi do the same; and, further, that their children retain the former names. Then—



and if we compare this with the state of things among the Kamilaroi, we find that they are identical. Indeed, we actually

[1] Herodotus, iv. 145. Mr. Cameron says that it is, and formerly was much more, customary to exchange wives, in order to avert some great calamity, or merely to cement a friendship, and that occasionally tribal brothers who have quarrelled make a temporary exchange of wives. ('Notes on some Tribes of New South Wales,' in the *Journal of the Anthropological Institute*, xiv. 353, No. 4, for May 1885.)

find that in the Turra tribe, who are divided into Wiltu (A) and Multa (B), and again subdivided, where A can only marry into B, and *vice versâ*, the rule is relaxed at their grand corrobborees, and wives are temporarily exchanged between the Wiltu and Multa ; and this although chastity is otherwise respected, and a marriage in the same clan rigidly forbidden. Now, if we suppose the Wiltu and Multa originally to have married amongst themselves, this could be explained on the supposition that the permanent exchange of wives was tempered by an occasional return to the former state of things, and perhaps to a former hetairism.

The Tasmanians were accustomed to seize their wives from other clans whose language was different ; and, though their wives were virtuous, promiscuosity was recognised. Hombron stands alone in his assertion that the Tasmanians were ill-favoured ; while on the other side Labilladière, Cook, Breton, Nixon, Jeffreys, Bibra, d'Urville, Peron, and Holman combine in giving us an agreeable picture of them. According to Dr. Gerland, they are probably of the same race as the Australians, but not further connected with them.[1]

In New Guinea (or Papua) a woman on marriage enters her husband's family, but relationship and inheritance go through the female line. A widow is obliged to marry her deceased husband's brother.

The inhabitants of Triton Bay were, according to Hombron, a mixed race, between Makassas, Balinese, Timorese, and Papuas ; and he accounts for their beauty on this score. To this Dr. Gerland, however, well remarks that 'such cross-breeds may possibly exist, but there must have been some aboriginal population to give birth to them, of the beauty of whom Hombron says nothing at all. It is besides impossible that these strangers could ever have been numerous enough for their offspring to form any important fraction of the population. The fact is, he has here followed his prejudices.'[2]

[1] Waitz and Gerland, *Anthropologie*, vi. 719, 720, 813, 815, 816.
[2] *Ibid.* pp. 536, 537, 634, 639, 661.

The savages of New Britain seem to have prohibitions very like some of the Australian tribes. In every tribe, says Mr. Powell, there are two distinct parties, between whom only marriage is allowed, the men generally buying women from foreign tribes.[1]

The folk-stories of the Greenland Eskimo show strong traces that they have gone through the same phases of marriage as other savage tribes. One of their most ancient traditions[2] seems to point to hetairism, with perhaps some slight restriction in cases of very near relationship, for, though a brother wishes to marry his sister, she refuses.[3] Their relationship was formerly entirely through females,[4] but they have now relationship through males.[5] In their marriage ceremonies they retain the form of capture.[6] Cranz says that they seldom marry cousins or people with whom they have been brought up, though a man will marry two sisters or mother and daughter at the same time.[7] Yet a story[8] of Rink's collection shows that marriage with an adopted sister living under the same roof was not unlawful.

The Eskimo of North-west America are generally in a far more backward state; hetairism is the rule; even brothers and sisters, parents and children, see no bar in their relationship. Marriage, however, exists, and a woman once married is not unfaithful without her husband's consent.[9]

The North American Indians are divided into clans varying in the several nations from three to ten, the members of which are dispersed among the different nations. Every clan has its distinguishing emblem, such as a bird, beast, fish, &c. called a *totem*. The Algonquins never intermarry among themselves, for they have all the same emblem or family name. The Iroquese and the Delaware never marry into their own

[1] Wilfred Powell, 'New Britain and the Adjacent Islands,' in the *Journal of the Society of Arts*, xxxiii. 836, No. 1699, for June 12, 1885.
[2] Rink, *Tales and Traditions of the Eskimo*, story number 35.
[3] *Ibid.* pp. 236, 237.
[4] *Ibid.* p. 25.
[5] Cranz, *Hist. v. Grönland*, i. 247.
[6] Rink, *ut sup.* story number 17, *i.a.*
[7] Cranz, *ut sup.* i. 209.
[8] Rink, *ut sup.* p. 291.
[9] Waitz, *Anthropologie*, iii. 313, 314; Bancroft, *Native Races*, etc. i. 65, 81, 92.

stock. The Canadian Indians do not marry in the first degrees of relationship, and greatly prefer sons to daughters, for the former add to their fighting power. The Kenai, Omaha, Atmah, and Kolosh choose their wives from another stock, their offspring, as everywhere else among these Indians, belonging to the mother's family. Now, however, the Kenai no longer care to follow the old custom ; marriages occur in the same tribe, and though consanguineous marriages are no commoner in consequence than they were before, owing to the one-sided idea of relationship, yet the old people assert that the mortality has risen since this innovation was introduced. The Nutka have a curious trade which looks as if they, at least, did not pay much attention to forbidden degrees ; for certain men make a trade of buying girls when six years old and selling them again as brides when they are old enough. Among the Tinneh, no man may marry a woman of the same family name as himself ; if he does, he is said to have married his sister, even though she be really no relation. The Choctaw are divided into two great septs, each of which is subdivided into four clans, and no man may marry into any of the clans belonging to his sept. The restriction among the Creeks, Natches, and Cherokees does not extend beyond the clan to which the man belongs. A Cherokee may marry a mother and daughter at once, but if he commits what they consider to be incest he is burnt alive. The Ayowas consider that every husband has the first right to his wife's younger sisters, but he is allowed to hand them over to his friends if he likes. Uncles and aunts are deemed the same as fathers and mothers, and first-cousins consider themselves brothers and sisters. In the north-easternmost portion of the United States, in that part known formerly as New England, marriage was allowed between brother and sister in a chief's family when there was no one else of equal birth to marry ; and in other parts chiefs sometimes arrogated to themselves the right of marrying within degrees forbidden to the rest of the tribe. But these were the exceptions, the general law being everywhere the same, that persons of the same family name were forbidden to intermarry. Relationship was every-

where through the mother alone. Half-brothers and sisters were therefore not related to each other, while maternal uncles and aunts were styled father and mother, and maternal cousins brother and sister.[1]

The whole nation of the Thlinkeets are divided into two tribes, the Wolves and the Ravens. These are each subdivided into five clans, and they have social castes and an hereditary nobility. Both war and marriage are prohibited between members of the same tribe.[2] Of the Chipewyan Ross says, 'I have heard among them of two sons keeping their mother as a common wife, of another wedded to his daughter, and of several married to their sisters.'[3] The Kutchins are divided into three clans, intermarriage within the same clan being forbidden; but since relationship is reckoned only on the female side close intermarriage is not prevented.[4] The Haida seem to have no prohibited degrees.[5] A Nootka child takes its mother's totem, although rank is inherited on the male side. Nobles prefer to obtain their first and chief wife at least from among the noble daughters of neighbouring tribes, and commoners likewise marry in their own rank. Persons of the same totem are not allowed to intermarry; and for this or some other reason it is not well-bred to invite anyone of the same family totem as the host to dinner.[6] 'Among the Spokanes,' a division of the Salish, 'a man marrying out of his own tribe joins that of his wife, because she can work better in a country to which she is accustomed.' Since a man could hardly do this were all his wives from different parts of the country this may explain the custom found here and in other parts of the world that a husband has the right to his wife's younger sisters.[7] The Flatheads, another tribe of the Salish, rarely marry out of the tribe. The Nez Perces, a division of the Sahaptin, 'rarely

[1] McLennan, *Primitive Marriage*, pp. 121, 122; Sir J. Lubbock, *Origin of Civilisation*, etc. pp. 135, 136; Waitz, *Anthropologie*, iii. 106 109, 328, 329, 333; Mayhew, *London Labour*, etc. vol. ii. book iii. p. 86; Reich, *Ehe*, etc. p. 378.

[2] Bancroft, *Native Races of the Pacific States*, i. 109.

[3] *Ibid.* p. 117, note 193.

[4] *Ibid.* p. 132.

[5] *Ibid.* p. 169, note 34.

[6] *Ibid.* i. 195, p. 197, note 75, and p. 199, note 80.

[7] *Ibid.* p. 277.

marry cousins.'[1] The mountain Indians of Northern California 'seldom, if ever, intermarry with those on the coast.'[2] Among the Modocs there is hetairism until marriage, after which adultery is very severely punished.[3] The Indians of Central California are scattered over the country in innumerable tribes whose customs are almost identical.[4] They are mostly polygamous and the chieftainship is hereditary in the male line.[5] At Monterey, La Perouse says it was customary for a man to marry all the sisters of a family. Near Fort Ross marriage is forbidden in the first and second degrees, according to Kostromitonow. At San Francisco parentage and other relations of consanguinity are no obstacles to marriage, and here also a man marries all his sisters-in-law, and frequently his mother-in-law into the bargain.[6] The Oleepa have traces of marriage by capture; and at Clear Lake there is a form of capture, like that in Australia, where a party of young men seize and carry off a girl, who afterwards becomes the wife of one of them.[7] The Shoshones are a large tribe composed of two groups, the Snakes and the Utahs. They hold marriage with a woman of another nation to be a capital offence, unless it is with the consent of the chief and council. Should a girl who has been bought as a bride refuse to marry her purchaser, she is seized by him and his friends, as among the Indians of Clear Lake.[8] Among the Apaches foreign women and children are taken in war, and their own daughters sold. They usually marry several sisters to secure domestic peace.[9] Among the Yuma, nearly allied to the Apaches, incest sometimes occurs.[10] The Pueblo Indians have a law that no one may marry out of the town without permission of the authorities; and the custom that maidens, inverting the ordinary custom among mankind, propose for the youths, tends to make intermarriage between neighbouring villages uncommon. Intermarriage in the same families is therefore frequent, a 'fertile cause of their deterioration,' according to

[1] Bancroft, *ut sup.* p. 278, note 178.
[2] *Ibid.* p. 350, note 60.
[3] *Ibid.* p. 351, and note 62.
[4] *Ibid.* pp. 362, 360.
[5] *Ibid.* pp. 385, 388.
[6] *Ibid.* p. 388, note 121.
[7] *Ibid.* p. 389, and note 124.
[8] *Ibid.* pp. 436, 437, notes 206, 207.
[9] *Ibid.* pp. 511, 512, and note 120.
[10] *Ibid.* p. 515.

Bancroft.[1] Yet he admits that they are good-looking,[2] brave,[3] suffer from few diseases, and those mostly chills and fevers,[4] while they are more civilised than any other tribe of North American Indians ;[5] a striking contrast to the neighbouring mixed Apaches, who are ugly,[6] brutal,[7] and suffer from fever, pneumonia, rheumatism, dysentery, ophthalmia, measles, small-pox, and a peculiar skin disease.[8]

The Cochimis, Guaicuris, and Pericúis of Lower California appear to have no marriage, no forbidden degrees, and to practise promiscuity.[9] The Bauzarigames, Cabezas, Contotores, and Tehuecos of New Mexico 'practise polygamy and interfamily marriages, but these are forbidden by the Ceris, Chinipas, Tiburones, and Tepocas.' The Acaxées and Tahus, again, are 'notorious,' says Bancroft, for their 'incestuous connections.'[10] Grade of civilisation seems to have nothing to do with this practice, for the Cochimis, Guaicuris, and Pericúis are hardly so civilised as wild beasts ; the Acaxées, brave, intelligent, and honest ; 'the Tepocas and Tiburones are fierce, cruel, and treacherous, more warlike and courageous than the Ceris of the mainland, who are singularly devoid of good qualities.'[11]

The Moquis of Arizona, New Mexico, are divided into totems, and members of the same totem may not intermarry. Relationship, however, is entirely through females, marriage is of the Beena class, a husband goes to his wife's abode, and he may be divorced by her when she pleases. Property is inherited by daughters to the exclusion of sons.[12]

In Mexico, under the Chichemeks, and before the foundation of the Mexican Empire, it appears that a man might only marry one wife, who must not be a 'near relation.' This custom seems to have persisted in the youth of the Mexican Empire : marriages between persons related in the first degree, or even between step-parents and their step-children, were

[1] Bancroft, *ut sup.* pp. 547, 548.
[2] *Ibid.* pp. 529, 530.
[3] *Ibid.* pp. 543, 555.
[4] *Ibid.* p. 554.
[5] *Ibid.* pp. 528–555.
[6] *Ibid.* p. 478.
[7] *Ibid.* pp. 498, 511, 522.
[8] *Ibid.* p. 521.
[9] *Ibid.* pp. 565, 566.
[10] *Ibid.* p. 585.
[11] *Ibid.* pp. 565, 590.
[12] Bourke, *The Snake Dance of the Moquis of Arizona*, etc. pp. 135, 136, 229, 230. London, 1884.

forbidden under penalty of death. About the time of Montezuma I. the nobles first became a caste apart and privileged, and this class soon became better formed and stronger than the common people, who also were divided into castes, since their professions were hereditary. It was the custom of the king and aristocracy to take their female relatives of the third degree as concubines, at least in the time of Montezuma II., and in all probability also before him.[1]

The old Spanish writers say that incest was habitual at their first arrival among the wild tribes of Mexico, especially in the districts of Vera Cruz, Tamaulipas, and Querétaro.[2]

Among the Misteks there does not seem to have been any restriction on marriages between near kin ; it was even customary for the ruler to marry a relative.[3] Among the Mayas of Yucatan marriage is forbidden between persons of the same family name, which is inherited through males. But in his description of the inhabitants of the village of Schawill Mr. Stephens says: 'Every member must marry within the rancho, and no such thing as a marriage out of it had ever occurred. They said it was impossible ; it could not happen. They were in the habit of going to the villages to attend the festivals ; and when we suggested a supposable case of a young man or woman falling in love with some village Indian, they said it might happen ; there was no law against it ; but none could marry out of the rancho. This was a thing so little apprehended that the punishment for it was not defined in their penal code ; but being questioned, after some consultations, they said that the offender, whether man or woman, would be expelled. We remarked that in their small community constant intermarriages must make them all relatives, which they said was the case since the reduction of their numbers by the cholera. They were in fact all kinsfolk, but it was allowable for kinsfolk to marry, except in the relationship of brothers and sisters.'[4] The aborigenes of Guatemala also marry as a rule within the tribe ; but

[1] Waitz, *Anthropologie*, iv. 27, 130, 43, 71, 64, 81, 103, 146, 89.
[2] Bancroft, *ut sup.* i. 635.
[3] Waitz, *ut sup.* p. 130.
[4] Bancroft, *ut sup.* i. 663.

several tribes are so strictly opposed to exogamous marriage that any progeny left by a stranger is destroyed.[1] In Honduras, 'relationship was no impediment to marriage.'[2]

Relationship outside the first degree is no hindrance to marriage in Nicaragua, but rather a recommendation.[3]

In Panama 'marriage was not contracted with strangers or people speaking a different language, and the tiba and lords only married with the daughters of noble blood.' Herrera says they married with the daughters of their sisters. Navarrete says they considered it wrong to marry a father's chief wife, a sister, or a daughter, which are probably the relationships referred to by Peter Martyr, when he says they may have any number of wives they please excepting their 'kindred and allies.'[4]

The Indians of Darien marry a woman first for a week to her father, or nearest relative, before she is handed over to her husband.[5]

The Panches of New Granada never marry a woman belonging to the same village as themselves.[6]

The Indians of the Orinoko district may marry their sister's daughter, says Gili, but never a brother's. It is not at all uncommon for a man to inherit his step-mother on the death of his father, or his sister-in-law on the death of his brother.[7]

The Indians of Guiana may be divided into four or five branches, the Carib, Wapisiana, Arawak, Warrau, and perhaps the Tarumas and Maopityans. These are divided into tribes, among which, says Mr. im Thurn, there was formerly no intermarriage except with war captives. There are traces of subdivision of the tribes into families, but these subdivisions and restrictions on marriage are now almost obliterated, and the Arawak, who longest preserved their lines of family descent, will serve as a type of the marriage system of all. They are divided into a number of families, about forty-seven, within which marriage was prohibited ; but since relationship is only recog-

[1] Bancroft, *Native Races*, etc. i. 702, 703.
[2] *Ibid.* p. 730
[3] Reich, *Ehe*, etc. p. 406.
[4] Bancroft, *Native Races*, etc. i. 772 and 773, note.
[5] Reich, *Ehe*, etc. p. 408.
[6] Waitz, *Anthropologie*, iv. 376.
[7] Reich, *Ehe*, etc. pp. 418, 419.

nised through females, this is no real prohibition. The husband lives with his wife's family. Close as this system permits marriage between relations to be, there are traces of the old Iroquois system of constant intermarriage between particular families.[1]

The ancient Peruvians, according to Garcilasso de la Vega, before the dynasty of the Incas, used to marry indifferently whomsoever they chose—their mothers, their sisters, or even their daughters. The children of the first Inca, Manco-Capac (A.D. 949–1006) married among themselves, and ever afterwards the Inca's chief wife was his sister, so that the blood of the royal Peruvian line, the blood of the Sun, might always be kept pure ; for they held that the Sun himself had married his sister the Moon, and from that union they were descended. According to Fernandez, the sister they married might not be a uterine sister. No female of the royal line was allowed to marry a vassal. The son of the Inca's sister was his heir, or, failing a direct heir, probably the eldest male relative on the female side was chosen. Trades and offices were generally hereditary ; no one could change his domicile ; the members of every community were forced to marry within that community ; nay, so paternal was the government that couples were paired by regular officials whose business it was. Gomara asserts that the soldiers customarily married their sisters after the royal example ; and both he and Herrera say that the Orejones were permitted by Huayna-Capac (A.D. 1475–1525) to marry their female relatives on the paternal side. Hence, since polygamy was only permitted to the high nobles, by far the larger proportion of marriages in ancient Peru were between near kin, for it is impossible that a community always marrying among themselves, and never allowed to change their domicile could have done otherwise. Far from being reduced to either physical or mental decay by these laws, there resulted a degree of skill in the arts apparently equal to any ancient civilisation of that latitude ; while after the first surprise was over the people resisted with such bravery the attack of the

[1] Im Thurn, *Among the Indians of Guiana*, pp. 163, 175–186. London, 1883.

Spaniards that these were more than once reduced to very unpleasant straits.[1]

The Brazilian races differ greatly from one another as to their marriage regulations. In some of the very scattered tribes, who live in small communities far removed from each other, the nearest relatives intermarry. In more populous districts, on the contrary, the tribes are divided into families, and no one may marry into his own family.[2] The Mandrucus have the levirate law. The brother of a widow is obliged to marry his sister's daughter, if she is marriageable, and he cannot find a substitute. An uncle on the paternal side is not allowed to marry his niece. Lerius, who travelled towards the end of the sixth century in Brazil, says, 'No one marries his mother, sister, or daughter; further consanguinity have they none. A paternal uncle may marry his niece, and all degrees outside this are open.'[3] Freycinet asserts that it is by no means rare that a Coroado is at once father, brother, and even son-in-law to the same person.[4] The Tupi only consider marriage to be forbidden in the first degree and with a maternal aunt or a uterine sister; but an uncle has the prior right to his niece's hand.[5]

'Long experience,' says Father Martin Dobrizhoffer, 'has convinced me that the respect to consanguinity, by which they are deterred from marrying into their own families, is implanted by nature in the minds of most of the people of Paraguay.'[6] But Dobrizhoffer studied chiefly the Abipones, and therefore we must consider his remarks as applying only to them. He says that since the women are obliged to suckle their infants for three years, they often practise infanticide to prevent their husbands seeking other wives in the meanwhile. It is the boy who is generally sacrificed thus, for when a son

[1] Waitz, *Anthropologie*, i. 204; iv. 411, 415, 416, 412, 417, 461, 473-477, 478 *et seq.*; J. A. N. Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1860, i. 217. On the science of the ancient Peruvians see also Godron, *De l'Espèce et des Races*, ii. 238, 239. There seems to be a very great resemblance between the ancient Egyptian and Peruvian civilisations.

[2] Sir J. Lubbock, *Origin of Civilisation*, pp. 137, 138.

[3] Reich, *Ehe*, etc. pp. 434, 436.

[4] J. A. N. Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1860, i. 218.

[5] Waitz, *Anthropologie*, iii. 422.

[6] Cited by Tylor, *Researches into the Early History of Mankind*, p. 287.

grows up it is necessary to buy a wife for him ; while a grown-up daughter will always command her price. Rengger tells us that many of the Indian races of Paraguay are too proud to intermarry with any race of a different colour, or even of a different stock ; and in consequence these races are free from syphilis. Azara says of another tribe, the Charruas, a brother is never allowed to marry a sister ; from which I presume that marriages outside the second degree are permitted.[1]

In the Argentine Republic, says Mantegazza, consanguineous marriages are frequent, 'with all their unhappy consequences.'[2]

The Patagonians marry in every degree save the 'first.'[3]

The Caribs generally married their father's or mother's sister's daughter, who, according to Cieza, were considered to be the wives appointed by nature for them, and often married several sisters at once. Relationship was through females alone ; but the sons, says Herrera, generally inherited something from their father. According to Bancroft, any Carib woman who formed a connection with a stranger was slowly whipped to death.[4] Yet Walker says, on the authority of Dr. Hancock, 'the Caribes are the only American tribe who, without restraint, take wives from the other tribes adjacent ; and their superiority over all their neighbours is too well known to require a word in illustration.'[5] Probably Dr. Hancock refers to the Black Caribs, a mongrel stock.

Minutoli relates that the people of Lanzarota and Fuerteventura formerly practised polyandry, a wife usually having three husbands, who were but little more than her slaves. In the isles of Palma and Gomera the king had the *jus primæ noctis*, and the first-born were therefore considered

[1] Reich, *Ehe*, etc. pp. 455–458.

[2] Cited by Reich, *ibid.* Signor Mantegazza has written, besides his *Lettere Mediche sulla America Meridionale*, a pamphlet entitled *Studj sui Matrimononj Consanguinei*, in which he does not mention anything about the unhappy consequences here. I have not seen the former work.

[3] Waitz, *Anthropologie*, iii. 505.

[4] *Ibid.* pp. 353, 383 ; Bancroft, *Native Races*, etc. i. 728.

[5] Walker, *On Intermarriage*, p. 364.

nobles. Beauty in these islands is measured by the pound; yet the women were considered fruitful, though they had to suckle their children by means of goats. No woman was obliged to bring up more than two daughters, all the rest might be killed.[1]

Du Chaillu asserts that in Western Equatorial Africa the children belong to the mother's clan, and there is no intermarriage in the same clan, however far removed the relationship may be; but there is no objection to taking a brother's or a father's wife. He adds: 'I could not but be struck with the healthful influence of such regulations against blood marriages among them.'[2] Monrad says the exact contrary. Blood relationship, according to him, is no hindrance to marriage, except it be in the first or second degrees.[3] The fact is that marriage is forbidden in the same clan, but that the relationship is one-sided, so that the nearest relatives on one side may marry, while intermarriage is forbidden between the most distant relatives on the female side. A Krooman inherits not only his father's wives, among his other property, but even his own mother.[4] The Fantis leave their wives, with the rest of their property, to their sister's son; and on other parts of the coast the son inherits all his father's wives, with the exception of his own and his father's mother. He must wait a year, however, before he may take possession. The Papels, the people about Cape Palmas, and the Bambarras have all a similar custom.[5] These latter are divided into several castes, and no one may marry out of his own caste, excepting the village chiefs, who are all of royal blood.[6] The Jolofs are also divided into castes, which probably do not intermarry. The castes of the Weavers and the Singers are considered so very low that nobody ever marries into them.[7] In Aquapim two families who have the same fetish do not intermarry,[8] the fetish doubtless being the same only for relatives on the female side.

[1] Reich, *Ehe*, etc. p. 318.
[2] Sir J. Lubbock, *Origin of Civilisation*, p. 133.
[3] Reich, *Ehe*, etc. p. 303.
[4] Mayhew, *London Labour*, etc. vol. ii. book iii. p. 63.
[5] Waitz, *Anthropologie*, ii. 115. [6] *Ibid.* pp. 134, 135. [7] *Ibid.* p. 137.
[8] Tylor, *Researches into the Early History of Mankind*, p. 284.

Alberti informs us that the Southern Kaffirs consider it uuseemly that blood relations should be much together, and do not allow marriage between them. Kay says they intermarry much with neighbouring peoples, the chiefs of the Amakosa always marrying with Amatembu women, and the Amapondo, though not always with neighbouring people, yet never marry in their own village. Affinity seems no hindrance to marriage, for a man may marry two sisters at once. A father's widow belongs to his son, and if there is no male heir, she becomes the property of the community.[1]

The Zulu only permit marriage between the most distant relations. A widow belongs to her brother-in-law.[2]

The Hottentots only marry outside the third degree, punishing incest with death.[3]

At Ponda, near Nsama's country, the people have no family names. A man bears his mother's name till his father's death, when he may assume his. Marriage is forbidden to the third degree, and first and second cousins are called brothers and sisters.[4]

Of Kasongo, king of Urua, Commander Cameron says: 'His principal wife and the four or five ranking next to her are all of royal blood, being either his sisters or first-cousins, and amongst his harem are to be found his step-mothers, aunts, sisters, nieces, and, still more horrible, his own children.' Yet this chief, who was presumably born from an incestuous marriage, 'was taller by nearly a head than anybody standing near at his court reception.'[5] A neighbouring ruler, Mata Yafa, king of Ulûnda, also had a sister as his principal wife.[6]

The Masai young men and unmarried women live apart in special kraals in promiscuity; every girl having several lovers, and every man the same, though each for a time has favourites.[7] When no longer capable of undergoing the hardships of a fighting bachelor, the man retires to the

[1] Waitz, *Anthropologie*, ii. 355, 390; Reich, *Ehe*, etc. p. 322.
[2] Waitz, *ut sup.* p. 390; Mayhew, *London Labour*, etc. vol. ii. book iii. 64.
[3] Reich, *ut sup.* p. 324.
[4] Livingstone, *Last Journals*, i. 223.
[5] Cameron, *Across Africa*, ii. 70, 92.
[6] *Ibid.* p. 149.
[7] Thomson, *Through Masai Land*, etc. p. 431. Nevertheless a pregnant girl is killed, since consummation is avoided, p. 580.

married man's kraal, and buys a wife or wives. But even after marriage chastity is not respected.[1]

The Wa Teita, of the same region, have marriage by capture, and there are traces of a former stage of hetairism in the custom that the bride is at first common to the bridegroom's companions. There are many more females than males, yet the price of a wife is so high that 'not infrequently' men take their sisters to wife, though the practice is highly reprobated.[2]

Of all tribes in Africa the Bogo seem to bear away the palm for prohibited degrees. Persons related to the seventh degree, says Munzinger, may not marry, whether the relationship be on the paternal or maternal side. Affinity is not held in such respect, for a widow falls, with the rest of her husband's hareem, to his son or brother; but she never marries her own son.[3]

The Somali frequently marry into foreign stocks, forbid marriage between first-cousins, and in all nearer degrees of relationship excepting that of uncle and niece. A widow is generally married by her deceased husband's brother.[4]

In Uganda, Speke saw King Mtesa at a levée, attended by women who were at once his sisters and his wives.[5]

The king of the Assubo-Galla always marries a relative; and the Seers, who constitute a separate caste, always marry among themselves, considering themselves the only true Gallas. Widows are inherited by the brother-in-law.[6]

The Gypsies of Egypt marry exclusively among themselves. According to Newbold, they are divided into three stocks, called respectively the Helebi, the Ghagar, and the Nuri, or Nawer. The women of the Helebi are modest, those of the Ghagar rather the reverse. The Helebi are most strictly endogamous, not even marrying into other Gypsy tribes; but the Nuri intermarry with the Egyptian Fellahin. Seetzen says that the Gypsies of Egypt always intermarry among themselves; nor do they allow their daughters to

[1] Thomson, *ut sup.* pp. 441, 442.
[2] *Ibid.* pp. 93, 94.
[3] Reich, *Ehe*, etc. pp. 333, 334.
[4] Waitz, *Anthropologie*, ii. 522.
[5] Adam, *Fortnightly Review*, 1865, p. 721.
[6] Waitz, *Anthropologie*, ii. 516, 518.

marry out of the tribe, unless among the Ghawazee.[1] These latter are a distinct people, of a different cast of countenance from the Arabs, who fancy themselves directly descended from the Barmekees. They hardly ever marry out of their tribe, the women perhaps never ; for they pride themselves on perpetuating their race unmingled. Lane considers them to be the direct descendants of the ancient Egyptian dancers, and says, 'Upon the whole, I think they are the finest women in Egypt.'[2]

The northern part of Africa is peopled chiefly by Mohammedans, who marry according to their prophet's law, but often restrict intermarriage with other tribes. The Moors of Tunis are an instance of this ; and their dislike of intermarriage with the Arabs is heartily reciprocated.[3] The Hal Ben Ali are also very proud of the purity of their blood, and therefore never contract marriage out of their tribe, except perhaps with one of the fair Abd-el-Noor females. The same is the case with the Ouled Sidi Sheikh, renowned for their beauty, who never give their daughters in marriage out of the tribe, unless to some marabout of great family. The Tuarik will not ally themselves even with the Arabs, but always marry among themselves, and are said to be very handsome.[4]

Of the Berbers south of Algiers, M. Solleillet says that the most heinous offence is marriage with foreign women.[5]

The people of Madagascar have intermixed slightly on the coast districts with Arabs, Europeans, and Indians ; but the Hovas, who are the chief race, have mixed very little with foreigners, although as a conquering race they have perhaps mixed more with neighbouring tribes than have these neighbouring tribes themselves. They are divided into four classes, the Andrians, or nobles ; the Hova commoners ; the Haza-Hova, or commoners reduced to slavery ; and the Andevo, or slaves. These classes are all forbidden to inter-

[1] Reich, *Ehe*, etc. pp. 248, 249.
[2] Lane, *Modern Egyptians*, ii. 108, 109.
[3] Reich, *Ehe*, etc. p. 295.
[4] J. A. N. Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 191 ; Godron, *De l'Espèce et des Races*, ii. 166, 167.
[5] See the *Times*, under 'France,' June 14, 1875.

marry unless with a slave if she be freed first,[1] 'so that there is a tendency from the habits of the people to keep the original stock of any tribe free from much foreign admixture, for tribes and families as a rule marry among themselves in order to keep landed property together, as well as from strong clannish feeling. The Andrians are further divided into six clans, who rarely intermarry; and the Hova commoners into a great many clans, 'who very seldom intermarry, but keep mostly to their own family.'[2] Relationship is through females, and marriage is forbidden between the children of uterine sisters down to fifth-cousins inclusive.[3] In all probability marriage is forbidden in the direct ascending and descending line, though neither Ellis nor Sibree say so. Brothers and sisters of the whole blood are also forbidden to intermarry, which implies some slight recognition of relationship through males; and this is further shown in the rule that half brothers and sisters, and first and second cousins of the whole blood, have to observe 'a slight ceremony' when they intermarry.[4] The king, as a matter of course, marries a near relative in order to preserve the succession in his own line. Thus Radama's first wife was his sister, and another was his cousin Ranavalou. As a rule, all a wife's younger sisters are included in the husband's hareem.[5]

Among the Sàkalàva, some of the clans of nobles may intermarry, but only the highest ranks are permitted to marry a commoner. The commoners are also divided into clans, which rarely intermarry, and, as among the Hovas, a freeman can only marry a slave if she be first freed. Relationship is through females; and aunts, uncles, nephews, and nieces are considered to be nearly as closely related as parents and children.[6]

The diseases most prevalent are not those of the type usually ascribed to consanguineous marriage: idiocy is rare

[1] Ellis, *History of Madagascar*, i. 164; Sibree, *The Great African Island* pp. 108–110.
[2] Sibree, *ut sup.* pp. 109, 182, 184, 185, 248.
[3] Ellis, *ut sup.* i. 165; Sibree, *ut sup.* pp. 185, 248, 249.
[4] Ellis, *ibid.*; Sibree, *ibid.* p. 248.
[5] Waitz, *Anthropologie*, ii. 432, 433, 446.
[6] Sibree, *ut sup.* pp. 256, 247, 167.

and insanity almost unknown. No cripples are to be seen, but they may be destroyed at birth; scrofulous and cutaneous disease occurs, probably due to want of cleanliness.[1]

In the succeeding chapter we shall proceed to consider the immediate derivation of modern European law on the prohibited degrees.

[1] Sibree, *ut sup.* p. 248; Ellis, *ut sup.* pp. 219, 220.

CHAPTER III.

THE HISTORY OF THE CHRISTIAN PROHIBITED DEGREES OF MARRIAGE.

THE prohibited degrees now in force in Christian States have their remote origin in the natural process of development already described ; but they have been modified first in the direction of greater severity by the asceticism introduced into Europe from the East soon after the introduction of Christianity, and secondly in the opposite direction by the development of sound civilisation.

In all countries and at all times asceticism has arisen spontaneously as the direct result of dissolute manners, generally a protest of the better nature of man, and so a moral protest against the emptiness of a merely sensual life. Asceticism has also a physiological foundation in the protest of the body against a sensual and inactive life. It is therefore preached by Buddha and most of the great reformers ; it is preached by the modern physician who sends his patients to starve in a German bath ; it is practised by savages when they wish to prepare for any great undertaking, and by our modern athletes in similar circumstances. But in every instance the wise and discriminative commands of the reformers are perverted by the ignorant, the faddist, and the fanaticist, the weakly obstinate, and the narrow-minded. They carry a general rule of conduct to extremes ; they cannot see why there should be exceptions ; and, above all, they can never doubt.

In the gospels celibacy is not recommended except anyone feels impeded by marriage in the duty he owes to God. Christ puts that duty above all others, and next to it the duty to cleave unto one's wife.[1] St. Paul, however, distinctly puts the celibate state above the married, not because he considers marriage to be sinful, but because it brought trouble to the flesh, and was incompatible with entire devotion to God.[2] The author of the Revelation, moreover, saw a hundred and forty and four thousand saints round the Lamb, which were redeemed from earth because they had not defiled themselves with marriage.[3] Imbued as all reformers were at that time of general demoralisation with ascetic ideas, it was difficult for Christianity to escape asceticism. Fortified with these unfortunate sayings, escape was impossible. Ascetic ideas gained ground among the Christians with wonderful rapidity, produced incalculable mischief, and worked dreadful misery for centuries.

Their effect upon the law of marriage, and altogether upon the light in which marriage was regarded, was lamentable: for, like all interference with liberty, it merely increased the immorality it was expected to prevent, besides creating other evils of its own. The history of heresies is full of the reaction from austerity to immoral licence; that of the Church, of immorality fostered by asceticism, and more or less openly acknowledged. Though, according to Southey, nothing in ecclesiastical history is more certain than that no such obligation as celibacy was imposed on the clergy during the first three centuries,[4] it was at all events considered a virtue long before. Justin Martyr retorted on those who argued that marriage could not be evil since God had created the sexes, that God made some women naturally barren. Clemens of Alexandria accused the Gnostic Basilides of not considering the celibate state far superior to the married.[5] Athenagoras and Tertullian both forbade second marriages;[6] the former,

[1] Matt. xix. 1–12.
[2] 1 Cor. vii. 28, 29, 33, 34, 38.
[3] Rev. iv. 1–4.
[4] Buckle's *Common Place Book*, Art. No. 130.
[5] Reich, *Ehe*, etc. pp. 63, 65.
[6] Buckle, *ut sup.* Art. No. 70.

especially, looking upon marriage as a state which we had far better avoid altogether. Origen, also, was against second marriages, and Lactantius considered that if men could not be prevented from entering into marriage, every effort should be made to render them as platonic as possible.[1] St. Ambrose in the fourth century, though he did not positively condemn second marriages, yet condemned the tenets of Jovinian, that marriage, and moderate living, was as pleasing to God as asceticism, and considered celibacy absolutely necessary for priests and deacons. Jerome only tolerates marriage at all as the least objectionable means for the production of monks and nuns; and raised his voice against the abominable doctrine of Jovinian, and the similar opinions of Vigilantius and Helvidius—'sacrilegious tenets,' as he calls them—which he could not 'hear with patience, or without the utmost grief.'[2] Saints Jude, Simon, and James, called the brothers of Christ, were at first understood to be so. But the Gnostics, and afterwards the orthodox Greeks, thinking any reflection upon the perpetual chastity of the Virgin Mary derogatory to her, gave Joseph a second wife. The Latins improved on that hint, asserted the perpetual celibacy of Joseph, and justified by many similar examples the new interpretation, that Jude, as well as Simon and James, who are styled the brothers of Jesus Christ, were only His first-cousins.[3] Divorces *sine causa sontica* or *bona gratia* were rather encouraged by the Christian emperors on account of the ascetic spirit prevalent, and, though Justinian discountenanced them, his grandson Justin again encouraged the practice, which probably was common up to the ninth or tenth century.[4] Gregorius of Nyssa, Cyrill of Jerusalem, Cyprian, and Epiphanius all praise the celibate state.[5] Augustine, on the other hand, allows second, and even third, marriages. Eustathius prohibited marriage altogether; and Ignatius thought that no Christian ought to marry without the con-

[1] Reich, *Ehe*, etc. pp. 64, 66.
[2] Buckle's *Common Place Book*, Arts. Nos. 70, 133.
[3] Gibbon, *Decline and Fall of the Roman Empire*, ii. 415, note 48.
[4] John Taylor, *Elements of Civil Law*, p. 362.
[5] Reich, *Ehe*, etc. p. 66.

sent of his bishop, to the end that these unions should conform more to the spirit and less to the flesh.[1]

Mummy was a valuable medicine in the Middle Ages, but the mummy of a virgin was by far the most efficacious.[2] It became part of the canon law that second and third marriages should not be countenanced by the presence of the priest at the marriage feast. 'What kind of presbyter would he be who, for the sake of the dinner, countenanced such a union by his presence?' cries Theodore, Archbishop of Canterbury A.D. 668–690, in an outburst of indignation at the idea.[3] Before the Reformation the honour of a garland was denied a widow who married again; and by the canon law if a man married two virgins in succession, or if a man married a widow, such offender was deemed guilty of bigamy, and even by the law of the land incapable of benefit of clergy.[4] The light in which the Church looked upon marriage is shown more plainly in other restrictions; indeed, there is no doubt that, if the clergy had had their way, they would have forbidden all mankind, as they forbade themselves, ever to enter into the bonds of matrimony.[5]

The marriage of Leo the Philosopher, in the tenth century, raised quite a schism in the Greek Church, for he actually

[1] Reich, *ut sup.* p. 67; Buckle, *ut sup.* Art. 70; Mosheim, *Eccles. Hist.* p. 103.

[2] Buckle, *ut sup.* Art. 1092.

[3] Thorpe, *Ancient Laws, etc. of England*, etc. p. 283, *Theodore, Pœn.* xvii. § 10.

[4] Buckle's *Common Place Book*, Art. No. 70. The original meaning of the word *bigamy* was marriage of this sort, not of two women at once.

[5] 'Qui in matrimonio sunt, abstineant se in iii. xl^ma^, et in Dominica nocte, et in Sabbato, et feria iiii. et vi. quæ legitimæ sunt, et iii. noctes abstineant se antequam communicent, et i. postquam communicent, et in Pascha usque ad octabas. * * * In primo conjugio presbyter debet missam agere, et benedicere ambos, sicut in Libro Sacramentorum continetur, et postea abstineant se ab æcclesia xxx. diebus; quibus peractis, pœniteant xl. dies et vacent orationi, et postea communicent cum oblatione. * * * Si quis vir, aut si quæ mulier, Dominica die, vel in natale Sanctorum; panes Deo offerant, necnon et communicaverint, non debent sequenti nocte nubere. * * * Quod si propter ebrietatem acciderit, sine consuetudine, iiii. dies pœniteant.' (p. 282, *Theodori Arch. Cant. Liber Pœnitentialis*, xvii.) 'Sancti libri docent quid cuique homini fideli faciendum sit, cum legitimam suam uxorem primum domum duxerit; id est, juxta librorum doctrinam, ut, per spatium trium dierum et noctium, castitatem suam servare, et tunc tertio die missæ suæ adesse, et ambo eucharistiam accipere debeant, et deinde conjugium suum tenere coram Deo, et coram mundo, uti ipsis necesse erit. Et conjuges omnes oportet castitatem suam servare xl. dies et noctes ante sanctum Pascha, et per totam hebdomadam paschalem, et semper nocte diei Dominici, et

wished to bring in a law to legalise his own and other fourth marriages. So great was the opposition, however, to such a horrible permission that, though Leo was able to tide it over during his lifetime, yet his son, the very issue of that fourth marriage, was obliged to convene an assembly of the clergy, A.D. 920, which peremptorily forbade all fourth marriages, and only allowed third marriages under certain conditions.[1] The Eastern Christians very nearly imposed celibacy on their clergy in the fourth century.[2] Gregory the Great really did impose it, though a doubtful authority ascribes it to Pope Siricius, in the latter part of the fourth century. In the Council of Bourges, A.D. 1031, it was ordained that only the inferior ministers of the Church should be allowed to have wives or concubines. The Council of Rouen, A.D. 1072, forbade any minister who married to receive or dispose of any of the Church revenues; and the Council of Rome, A.D. 1074, ordered all those who were already married to divorce their wives. In England, however, this brutal enactment could not be enforced, for by a council held at Winchester, A.D. 1076, the secular clergy who were married were formally allowed to retain their wives.[3]

The injurious effects of this legislation soon became manifest. Even Gregory is said to have revoked his edict.[4] Laws had to be enacted again and again forbidding priests to have their mothers or sisters to keep house for them.[5] A tax used to be systematically levied by rulers for several centuries,

diei Mercurii, et diei Veneris.' (p. 371, *Pœnitentiale Ecgberti*, *Arch. Ebor.* lib. ii. sec. 21.) 'Si quis conjugem suam, si fieri potest, non cupidine voluntatis, sed solummodo creandorum liberorum gratia utitur, iste profecto sive de ingressu æcclesiæ, seu de sumendo Dominici corporis sanguinisque mysterio, suo est relinquendus judicio; quia a nobis prohiberi non debet, cum ei juxta præfinitam sententiam, etiam ecclesiam licuerit entrare; veruntamen quia ipsa licita admixtio conjugis sine voluntate carnis fieri non potest, ideo aliquando a sacri loci ingressu abstinendum est, quia voluntas ipsa esse sine culpa nullatenus potest.' (p. 335, *Excerp. Ecgberti Arch. Ebor.* cxii.) See Thorpe, *ut sup.* It appears that, at all events at a later period, as in the case of marriages between near kin, a dispensation might be bought to cover these prohibitions. (See Buckle's *Common Place Book*, Art. 1091.)

[1] Mosheim, *Ecclesiastical History*, i. 228.

[2] *Ibid.* p. 111.

[3] Buckle's *Common Place Book*, Arts. Nos. 75. 99, 130.

[4] *Ibid.* Art. No. 130.

[5] Lecky, *History of European Morals*, ii. 351.

which was simply a licence to priests to keep concubines,[1] and Henry III. of Castille, among other social enactments, ordered that the concubines of priests should wear a piece of scarlet cloth in their head-dress, in order that they might be distinguishable from honest women.[2] In the beginning of the fifth century their concubines were legalised by the Council of Toledo ; indeed, these women seem to have had a special name, 'Focaria.'[3] A law of Charlemagne seems to imply that priests sometimes practised even polygamy ;[4] and many of the heterodox sects were avowedly founded to reform the orthodox priesthood. Even the throne of St. Peter was reached by the prevailing immorality.[5] 'It was observed,' says Mr. Lecky, 'that when the priests actually took wives, the knowledge that these connections were illegal was peculiarly fatal to their fidelity, and bigamy and extreme mobility of attachments were especially common among them.'[6] The idea, so encouraged by the Church, that he who giveth not his virgin in marriage doeth better led, as we have seen, on the one side to the wildest orgies of licence, and on the other to an equally immoral outburst of celibacy. St. Nilus, St. Ammon, St. Melania, St. Abraham, and St. Alexis were all married, and lived in continence. The emperor Henry II., Edward the Confessor, and Alphonso II. of Spain are all said to have been husbands but in name.[7]

The reaction of this ascetic feeling upon the prohibited degrees was seen as soon as the Church had fairly established her power. At the advent of Christianity marriage with a niece was by Roman law forbidden, but forbidden with some hesitation. It is not mentioned among the levitical prohibi-

[1] Lecky, *Hist. of European Morals*, ii. 349. Compare also the following pages.
[2] *Biog. Univ.* art. 'Henri III.'
[3] Buckle's *Common Place Book*, Art. No. 65.
[4] 'Si sacerdotes plures uxores habuerint, sacerdotio priventur ; quia sæcularibus deteriores sunt' (*Capitul.* A.D. 769). See Hallam's *Middle Ages*, ii. 7, note.
[5] Gibbon says of Pope John XXIII. of blessed memory : 'The most scandalous charges were suppressed; the vicar of Christ was only accused of piracy, murder, rape, sodomy, and incest' (*Decline and Fall*, etc. xii. 363) : and D'Israeli, in his *Curiosities of Literature*, i. 307, gives this pasquinade on Pope Alexander VI., written on a certain lady's tomb :

'Hoc tumulo dormit Lucretia nomine, sed re
Thais ; Alexandri filia, sponsa, nurus.'

[6] Lecky, *History of European Morals*, ii. 350, 351. [7] *Ibid.* ii. 341, 342.

tions, and such marriages were, as they still are, common among the Jews. The slightest hint, however, was quite sufficient for these misguided fanatics. Some degrees of kinship being forbidden, it must be virtuous to abstain from marriage within more distant degrees. Thus the emperor Theodosius I. (A.D. 379–395) was the first to bring in the iniquitous law that no man might marry his first-cousin, under penalty of death by burning, and confiscation of his property. St. Augustine seems to think that even before this law of Theodosius the marriage of cousins was discouraged by the Church, and that in consequence they were but of rare occurrence. St. Ambrose takes for granted that they were forbidden, though on what authority he grounded this theory no one knows. He reasons that since marriage with a first-cousin was forbidden, much more, therefore, is a marriage with a niece. The fact that some infatuated individual (probably at the instigation of the devil) actually dared to ask this redoubted saint whether it was permitted to marry a niece, since such marriages were nowhere prohibited in the Scriptures, seems to indicate that before this enactment of Theodosius there was no settled law on the subject, but only a general feeling that it was unseemly to marry anyone near akin. It is supposed that Theodosius was acting under the advice of St. Ambrose, and in spite of the opinions of St. Athanasius and St. Augustine when he made this law; for these both declared that marriages between first-cousins were neither against the law of God nor of man.[1] Arcadius (A.D. 395–408), and Honorius (A.D 395–423), his sons who succeeded him, the former in the Eastern Empire, the latter in the West, confirmed their father's law, but mitigated the penalties. Arcadius soon afterwards permitted these marriages again; his brother, however, still persisted in the prohibition, though he reserved to himself the power of giving dispensations. Without a dispensation the offspring were considered bastards, and the pro-

[1] Πρόσταγμα τοῦ Κυρίου καὶ νόμον, νόμιμον εἶναι γάμον τὴν πρὸς ἀνεψιοὺς συζυγίαν. And St. Augustine, though he does not approve of these marriages for other reasons, says: 'Nuptias has nec Divinam Legem et nondum humanam prohibuisse' (cited by Samuel Dugard, *The Marriages of Cousin Germans Vindicated*, pp. 87, 88).

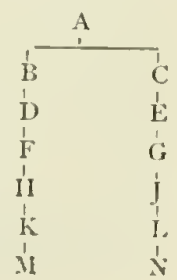
perty of the parents was confiscated. Justinian (A.D. 527–565) confirmed the freedom granted to cousins by Arcadius to marry; and also, as we have seen, confirmed the previous decretals which prohibited marriage with a niece.[1] Heraclius (A.D. 610–641) again repealed this prohibition when after the death of his wife Eudocia he married his niece Martina. Nicephorus indignantly styled this marriage *ἄθεσμον* and *ἀθέμιστον*, and adds that the two sons born from it were both the objects of the Divine wrath; the elder having a stiff-neck, and the younger being deaf. From the ordinary point of view this seems to have been a little hard upon the youths, seeing that they, at least, were innocent of their birth. The popular voice, however, added that the disease of the emperor was also due to the same cause. This seems again more righteous; but then we find that Constantine, the son of Heraclius and Eudocia, who was not born in sin, and was born even before his father's second sinful marriage, was so weakly as to require a guardian—which negatives the whole doctrine of Divine wrath. The 'populace' of course ascribed his death to poison administered by his step-mother, notwithstanding that he had been an invalid all his life.[2] Perhaps some additional explanation of the indignation of the Church may be found in the fact that Heraclius had been compelled to make sacrilegious use of her treasures in the defence of his empire against the inroads of the barbarians.

In the West the Ostrogoth kings (A.D. 493–553) not only endured these prohibitions, but even added to them occasionally, until marriage was forbidden in the fifth and even sixth degrees.[3] From the general isolation of the different parts of

[1] Dr. Pusey, evidence before the *Royal Com. on Mar. Law*, 1848, pp. 39–44; Sandars' *Institutes of Justinian*, p. 107; Taylor, *Elem. of Civ. Law*, pp. 331, 335, 336; Reich, *Ehe*, etc. p. 72.

[2] Gibbon, *Decline and Fall*, etc. ix. 9; viii. 236, note 73.

[3] Hallam, *Middle Ages*, i. 512. By civil law second-cousins are related in the sixth degree; since every generation is counted between the two relatives, upwards from the one to the first common ancestor, and then downwards to the other. By canon law only one line, and that the longest, is counted; from the first generation to the person in question. Thus: K is related in the fifth degree to C, E, G, J, and L, but in the sixth degree to N. The Romans counted relationships in the same way as we do now; that is, according to the civil method see



Europe the prohibitions were not severe everywhere alike. Bishops not only married, but married several times.[1] The Colonna cardinals founded, endowed, and protected a convent for 'the daughters of the family who embraced a monastic life, and who, in the year 1318, were twelve in number. The others were allowed to marry with their kinsmen in the fourth degree, and the dispensations were justified by the small number and close alliances of the noble families of Rome.'[2] Such cases were numerous. Robert Plot notices the number of intermarriages between relatives of the same name in Staffordshire.[3] Mr. Walter Rye shows that tenants could not intermarry outside the manor without being fined, as Alice Cauncelor was, who had to pay thirteen shillings and fourpence for this offence (*temp.* Richard II.) In the history of the Thurgarton Manor, Norfolk, only six instances occur from the time of Richard II. to James I.[4] Du Cange shows that this rule was almost universal over Europe,[5] and, whether caused by this or by the pride of isolation, there is no doubt that the people themselves looked with considerable suspicion on any 'stranger' who wished to marry among them.[6]

At a council held at Epaune, A.D. 517, under Sigismund,

Sandars' *Inst. of Just.* p. 107). Pope Gregory I. (A.D. 590–604), according to M. Chipault, was the first to compute relationship by canon law (see *Études sur les Mar. Cons.* p. 93). By this means the prohibited degrees were made insidiously wider, just as a modern representative sought to increase his means by debasing his coin.

[1] Aldhun, the first Bishop of Durham (A.D. 990), gave his daughter some lands on her marriage upon condition that if she were divorced he should have his lands back, a contingency which actually occurred (Chalmers, *Biographical Dictionary*). Cardinal Beaton had three sons, who were all legitimised during his lifetime, and styled 'the natural sons of the Right Reverend,' etc. (Chalmers, *ibid.*) Such examples could be very greatly extended.

[2] Gibbon, *Decline and Fall*, etc. xii. 342, note 45.

[3] Plot, *History of Staffordshire*, p. 313.

[4] Rye, *Norfolk Antiquarian Miscell.* vol. ii. pt. ii. p. 412.

[5] Du Cange, *Gloss. Med. et Inf. Latin.* art. 'Forismaritagium.'

[6] There are still several proverbs current in Italy showing the unwillingness of peasants to marry out of their community: in the valley of Andorno they say, 'Le piante forestiere lassù non fanno buon frutto'; and, 'Alle veglie ed ai balli mai sotto il ponte della Balma,' the bridge in question being the boundary. In Tuscany, again, a proverb runs: 'Moglie e buoi de' paesi tuoi'; and another—

'Pampani e uva
E la mia mamma sempre diceva
L' amor del forestiero poco dura,'

forestiero nearly always meaning, not a foreigner, but a member of another parish. (De Gubernatis, *Usi Nuziali*, pp. 95-97.) Another instance of the same feeling, which is doubtless still common in Europe, is afforded by the village of Ladis, in

king of Burgundy, marriage was prohibited in the fourth civil degree, and this canon was confirmed by the Councils of Clermont, A.D. 535; of Orleans, A.D. 538; and of Tours, A.D. 567. In the canons of these councils, as now extant, the sixth degree is also forbidden; but Dr. Pusey observes that it has been omitted from the last edition of decretals, which has been, however, badly edited. At the Council of Auxerre, A.D. 578, marriage in the sixth civil degree, or between second-cousins, was forbidden. A small Spanish council which sat at Toledo, A.D. 531, went so far as to prohibit marriage wherever any relationship at all could be traced between the parties, whether by blood or affinity. But the Court of Rome does not seem to have adopted so impossible a regulation until the reign of Pope Zachary, A.D. 741. St. Gregory is said to have been the first to compute relationship by *generations* from a common parent, instead of by the rational method of counting the degrees between the parties in question, as was customary before him. He probably fixed the fourth canonical degree as the limit within which marriage was forbidden, that is, marriage between third-cousins was not permitted.[1] Pope Gregory III. (A.D. 731) prohibited marriage within the seventh canonical degree, or between sixth-cousins, equivalent to the fourteenth civil degree; and Pope Zachary (A.D. 741) informed Pepin of France that marriage was prohibited wherever any relationship could be traced. Yet up to the ninth century the prohibited degrees seem to have been still unsettled; for by the first Council of Mentz, A.D. 813, marriage was *thenceforth* prohibited within the sixth degree; in A.D. 847 the Bishop of Mentz recommends that marriage should be allowed in the fifth degree; but the council held at Worms, A.D. 868, again confirmed the enactment of the Council of Toledo, that marriage should not be permitted

the Tyrol, where for generations the girls have not been allowed to marry outside their village. A very beautiful girl who violated this custom was lately lynched by the youths of the place. (See the *Times* for September 7, 1886.)

[1] St. Gregory has been accused of forbidding marriage within the seventh degree, an accusation founded on an epistle from, and answer to, St. Felix, Bishop of Syracuse. This is probably, as Dr. Pusey shows, a mistake, for these epistles are now considered spurious (see *Royal Com. on Marriage Law*, 1848; *Evidence of Dr. Pusey*, p. 42, note).

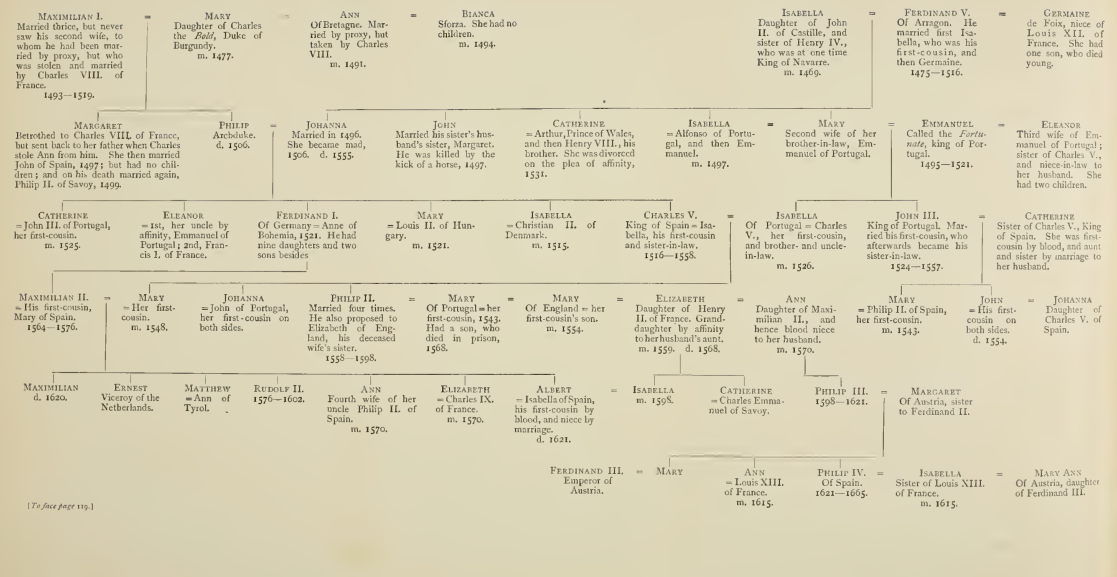
wherever any relationship was traceable. Again, at a council held at Douzy, A.D. 874, marriage was only prohibited within the seventh degree; and Pope Nicholas II. and a Roman council, A.D. 1059, also prohibited marriage within the seventh degree; an enactment which was again confirmed by Pope Alexander II. (A.D. 1062–1073).[1]

All these enactments make it evident that the people did not acquiesce quietly in these prohibitions, and the absurd length to which they were carried at a time when the Church held asceticism and chastity in no very great estimation shows that some other reason influenced them. This was the great revenue obtained from the sale of dispensations, and it is easy to see that the addition of every further degree to the list of prohibited marriages would increase them in a vastly increasing proportion. First the levitical degrees were magnified, then the computation of relationship was altered, affinity regarded as blood relationship, and, this not satisfying the greed of the priesthood, godfathers and godmothers were regarded as related to the child and its relations and each other! Luther and Henry VIII. both roundly accuse the Church of inventing prohibitions 'for lucre's sake.'[2] Nor was this, powerful as it was, the only incentive. Hallam points out that 'they served a more important purpose by rendering it necessary for the princes of Europe, who seldom could marry into one another's houses without transgressing the canonical limits, to keep on good terms with the Court of Rome, which in several instances * * * fulminated its censures against sovereigns who lived without permission in what was considered an incestuous union.[3] Thus King Charibert was excommunicated because

[1] Dr. Pusey, evidence before the *Royal Com. on Mar. Law*, 1848, pp. 41, 42; Chipault, *Études sur les Mar. Cons.* pp. 92-94.

[2] Luther says, in regard to marriages of the fourth degree: 'Der Pabst aber hat sie verboten aus lauter Heucheley, und um Geldes willen dispensiret er, und lasst's zu' (cited by Reich, *Ehe*, etc. p. 135). In the preamble of Stat. 32, Henry VIII. cap. 38, it says that these prohibitions are not 'God's law,' and that they were 'for their lucre by that court [the Pope's] invented, the dispensations whereof they always reserved to themselves * * * and all because they would get money by it' (see J. Fry, *The Case of Marriage between near Kindred*, etc. pp. 135, 136; and also Samuel Dugard, *Vindication of the Marriage of Cousin Germans*, p. 90). This last author also accuses the Pope of granting dispensations for marriages, which were for 'Holinesse sake' prohibited, for the sake of lucre (*ibid* p. 89).

[3] Hallam, *Middle Ages*, ii. 9.


Maximilian I. Married thrice, but never saw his second wife, to whom he had been married by proxy, but who was stolen and married by Charles VIII. of France. 1493—1519.
Mary Daughter of Charles the Bold, Duke of Burgundy. m. 1477.
Ann Of Bretagne. Married by proxy, but taken by Charles VIII. m. 1491.
Bianca Sforza. She had no children. m. 1494.
Isabella Daughter of John II. of Castille, and sister of Henry IV., who was at one time King of Navarre. m. 1469.
Ferdinand V. Of Arragon. He married first Isabella, who was his first-cousin, and then Germaine. 1475—1516.
Germaine de Foix, niece of Louis XII. of France. She had one son, who died young.
Margaret Betrothed to Charles VIII. of France, but sent back to her father when Charles stole Ann from him. She then married John of Spain, 1497; but had no children; and on his death married again, Philip II. of Savoy, 1499.
Philip Archduke. d. 1506.
Johanna Married in 1496. She became mad, 1506. d. 1555.
John Married his sister's husband's sister, Margaret. He was killed by the kick of a horse, 1497.
Catherine = Arthur, Prince of Wales, and then Henry VIII., his brother. She was divorced on the plea of affinity, 1531.
Isabella = Alfonso of Portugal, and then Emmanuel. m. 1497.
Mary Second wife of her brother-in-law, Emmanuel of Portugal.
Emmanuel Called the Fortunate, king of Portugal. 1495—1521.
Eleanor Third wife of Emmanuel of Portugal; sister of Charles V., and niece-in-law to her husband. She had two children.
Catherine = John III. of Portugal, her first-cousin. m. 1525.
Eleanor = 1st, her uncle by affinity, Emmanuel of Portugal; 2nd, Francis I. of France.
Ferdinand I. Of Germany = Anne of Bohemia, 1521. He had nine daughters and two sons besides
Mary = Louis II. of Hungary. m. 1521.
Isabella = Christian II. of Denmark. m. 1515.
Charles V. King of Spain = Isabella, his first-cousin and sister-in-law. 1516—1558.
Isabella Of Portugal = Charles V., her first-cousin, and brother- and uncle-in-law. m. 1526.
John III. King of Portugal. Married his first-cousin, who afterwards became his sister-in-law. 1524—1557.
Catherine Sister of Charles V., King of Spain. She was first-cousin by blood, and aunt and sister by marriage to her husband.
Maximilian II. = His first-cousin, Mary of Spain. 1564—1576.
Mary = Her first-cousin. m. 1548.
Johanna = John of Portugal, her first-cousin on both sides.
Philip II. Married four times. He also proposed to Elizabeth of England, his deceased wife's sister. 1558—1598.
Mary Of Portugal = her first-cousin, 1543. Had a son, who died in prison, 1568.
Mary Of England = her first-cousin's son. m. 1554.
Elizabeth Daughter of Henry II. of France. Granddaughter by affinity to her husband's aunt. m. 1559. d. 1568.
Ann Daughter of Maximilian II., and hence blood niece to her husband. m. 1570.
Mary = Philip II. of Spain, her first-cousin. m. 1543.
John = His first-cousin on both sides. d. 1554.
Johanna Daughter of Charles V. of Spain.
Maximilian d. 1620.
Ernest Viceroy of the Netherlands.
Matthew = Ann of Tyrol.
Rudolf II. 1576—1602.
Ann Fourth wife of her uncle Philip II. of Spain. m. 1570.
Elizabeth = Charles IX. of France. m. 1570.
Albert = Isabella of Spain, his first-cousin by blood, and niece by marriage. d. 1621.
Isabella m. 1598.
Catherine = Charles Emmanuel of Savoy.
Philip III. 1598—1621.
Margaret Of Austria, sister to Ferdinand II.
Ferdinand III. Emperor of Austria.
Mary
Ann = Louis XIII. of France. m. 1615.
Philip IV. Of Spain. 1621—1665.
Isabella Sister of Louis XIII. of France. m. 1615.
Mary Ann Of Austria, daughter of Ferdinand III.

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he married two sisters.[1] Celestine III. threw the kingdom of Leon under an interdict, because Alfonso IX. married Garsenda, princess of Castille, his cousin Alfonso's daughter, and he was obliged to divorce her. Sancho IV. of Castille was excommunicated because he married his second-cousin Maria. The succession of his son Ferdinand IV. was consequently disputed until he was legitimised by a papal bull. Pedro the Cruel of Portugal was excommunicated for marrying three wives in succession. Eleanor, heiress of Guienne and Poitou, who despised her husband as more of a monk than a man, got a divorce, with her husband's joyful assent, on the plea of affinity, and then married the unfortunate Henry II. of England.[2] And yet much closer cases of intermarriage were quietly permitted by the Popes. In a short period of the royal Spanish line alone we find that Ferdinand V. married his first-cousin; John, his son, married his sister's husband's sister, Margaret; Maria, his daughter, married her deceased sister's husband, Emmanuel the Fortunate, of Portugal, who, after his second wife's death, married his niece-in-law. Catherine, daughter of Philip I., married John III., of Portugal, the brother of her brother's wife, son of her sister's husband, and her first-cousin by blood. Charles V. married his first-cousin, who was also his sister-in-law. His daughter Mary married her first-cousin, Maximilian II. His daughter Johanna married John, son of John III. of Portugal, her first-cousin on both sides. And his son Philip II. was not only married four times, but the first marriage was with his first-cousin and sister-in-law, Mary of Portugal; the second was with Mary of England, his father's first-cousin; the third was the granddaughter of his aunt, though not by blood; but his fourth wife was his niece by blood, the daughter of Maximilian II. His daughter by his third wife Isabella married Albert, son of Maximilian II., who was her first-cousin by blood, uncle by marriage, and otherwise related by various channels, any one of which by strict canonical law should have been deemed sufficient to prevent that union.

[1] Evidence of Dr. Pusey before the *Royal Commission on Marriage Laws*, 1848, p. 45.

[2] *Biog. Univ.*

MAXIMILIAN I.
Married thrice, but never saw his second wife, to whom he had been married by proxy, but who was stolen and married by Charles VIII. of France.
1493—1519.

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MARY
Daughter of Charles the *Bold*, Duke of Burgundy.
m. 1477.

=

ANN
Of Bretagne. ried by prox taken by C VIII.
m. 1491

GERMAINE
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MARGARET
Betrothed to Charles VIII. of France, but sent back to her father when Charles stole Ann from him. She then married John of Spain, 1497; but had no children; and on his death married again, Philip II. of Savoy, 1499.

PHILIP
Archduke.
d. 1506.

JOHANNA
Married in 1496. She became mad 1506. d. 1555.

ELEANOR
Third wife of Emmanuel of Portugal; sister of Charles V., and niece-in-law to her husband. She had two children.

CATHERINE
= John III. of Portugal, her first-cousin.
m. 1525.

ELEANOR
= 1st, her uncle by affinity, Emmanuel of Portugal; 2nd, Francis I. of France.

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=

MARY
= Her first-cousin.
m. 1548.

JOHANNA
= John of Portugal, her first-cousin on both sides.

PHILIP
Married fou st- He also pro on Elizabeth land, his wife's sister.
1558—1

=

JOHANNA
Daughter of Charles V. of Spain.

MAXIMILIAN
d. 1620.

ERNEST
Viceroy of the Netherlands.

MATTHEW
= Ann of Tyrol.

RUDOLF II.
1576—1602.

Fourth uncle I Spain.
m.

MARY ANN
Of Austria, daughter of Ferdinand III.

[*To face page* 119.]

he married two sisters.[1] Celestine III. threw the kingdom of Leon under an interdict, because Alfonso IX. married Garsenda, princess of Castille, his cousin Alfonso's daughter, and he was obliged to divorce her. Sancho IV. of Castille was excommunicated because he married his second-cousin Maria. The succession of his son Ferdinand IV. was consequently disputed until he was legitimised by a papal bull. Pedro the Cruel of Portugal was excommunicated for marrying three wives in succession. Eleanor, heiress of Guienne and Poitou, who despised her husband as more of a monk than a man, got a divorce, with her husband's joyful assent, on the plea of affinity, and then married the unfortunate Henry II. of England.[2] And yet much closer cases of intermarriage were quietly permitted by the Popes. In a short period of the royal Spanish line alone we find that Ferdinand V. married his first-cousin; John, his son, married his sister's husband's sister, Margaret; Maria, his daughter, married her deceased sister's husband, Emmanuel the Fortunate, of Portugal, who, after his second wife's death, married his niece-in-law. Catherine, daughter of Philip I., married John III., of Portugal, the brother of her brother's wife, son of her sister's husband, and her first-cousin by blood. Charles V. married his first-cousin, who was also his sister-in-law. His daughter Mary married her first-cousin, Maximilian II. His daughter Johanna married John, son of John III. of Portugal, her first-cousin on both sides. And his son Philip II. was not only married four times, but the first marriage was with his first-cousin and sister-in-law, Mary of Portugal; the second was with Mary of England, his father's first-cousin; the third was the granddaughter of his aunt, though not by blood; but his fourth wife was his niece by blood, the daughter of Maximilian II. His daughter by his third wife Isabella married Albert, son of Maximilian II., who was her first-cousin by blood, uncle by marriage, and otherwise related by various channels, any one of which by strict canonical law should have been deemed sufficient to prevent that union.

[1] Evidence of Dr. Pusey before the *Royal Commission on Marriage Laws*, 1848, p. 45.

[2] *Biog. Univ.*

In fact, the prohibited degrees were far too useful to abolish. When Alfonso III. of Portugal divorced his wife for sterility and married Beatrix de Guzman, the Pope made no move; but when the same monarch attempted to reform some great abuses in the Church his kingdom was promptly laid under an interdict on the score of that divorce.[1] We see even now how Lord Lyndhurst's Act, which was intended to prevent marriage with a deceased wife's sister, is virtually evaded with impunity, its only effect being to put power into the hands of the wicked to repudiate their wives whenever they may choose to do so.[2] It may readily be imagined to what abuses the canonical prohibitions led. 'History,' says Hallam, 'is full of dissolutions of marriage, obtained by fickle passion or cold-hearted ambition, to which the Church has not scrupled to pander on some suggestion of relationship.'[3] It was thus that Philip I. of France repudiated Bertha for Bertrade. It was on the plea of affinity that Philip Augustus divorced Ingeburga of Denmark for Agnes of Méran, though she was related to him only through eleven degrees, of which two were mere affinity, as may be seen by the accompanying genealogical table. It is true that in this case, as in that of Henry VIII. of England, the Pope did not lend himself to the project; but the evil was done through the edicts of the Church, nor could the Church soften the bitter rage Ingeburga had to endure for six long years, or prevent poor Agnes from dying of a broken heart. The legend of Chilperic's marriage with Frédégonde is founded on the same iniquitous prohibitions. Audouère, the first wife of Chilperic, king of Soissons, had in her service a lady named Frédégonde, who, by her talent and intrigues, first became the confidant of her mistress, then the mistress of her master, and finally aspired to be his wife. The divorce of Audouère was brought about by the following ingenious plot: Chilperic's queen gave birth to a child during his absence in

[1] *Biog. Univ.*

[2] See *Royal Commission on Marriage Law*, 1848, Questions 3*a*, 6*a*, 103*b*, 118-120, 148, 180, 787, 818, 819.

[3] Hallam, *Middle Ages*, ii. 8.

Sweyn II. was distantly related to his wife Gytha, the daughter of James Amund, King of Sweden. He was therefore compelled to divorce her by Adebert, Archbishop of Brema, and consequently had many illegitimate children.

H
e.

LOUIS VI. = ADELAÏDE
1108—1137. Of Savoy.

A = PETER — LOUIS VII. = ADELAÏDE
of — 1137—1180. — Of Champagne. Third wife of Louis. m. 1160.

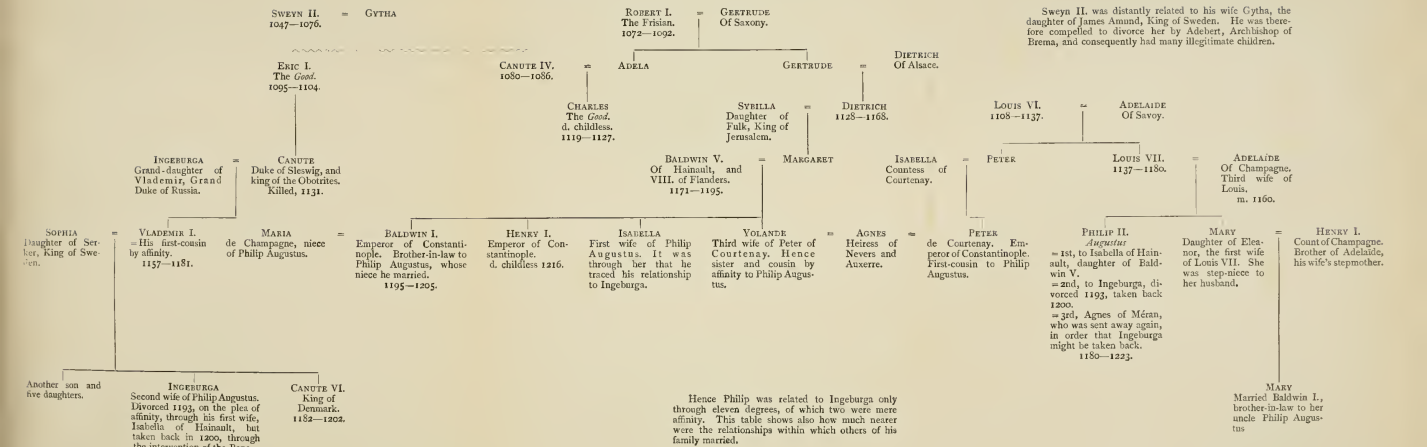
PETER
e Courtenay. Emeror of Constantinople. irst-cousin to Philip ugustus.

PHILIP II.
Augustus
= 1st, to Isabella of Hainault, daughter of Baldwin V.
= 2nd, to Ingeburga, divorced 1193, taken back 1200.
= 3rd, Agnes of Méran, who was sent away again, in order that Ingeburga might be taken back.
1180—1223.

MARY = HENRY I.
Daughter of Eleanor, the first wife of Louis VII. She was step-niece to her husband. — Count of Champagne. Brother of Adelaïde, his wife's stepmother.

MARY
Married Baldwin I., brother-in-law to her uncle Philip Augustus

THE RELATIONSHIP OF INGEBURGA TO PHILIP AUGUSTUS.


Sweyn II. 1047—1076.
Gytha
Robert I. The Frisian. 1072—1092.
Gertrude Of Saxony.
Eric I. The Good. 1095—1104.
Canute IV. 1080—1086.
Adela
Gertrude
Dietrich Of Alsace.
Charles The Good. d. childless. 1119—1127.
Sybilla Daughter of Fulk, King of Jerusalem.
Dietrich 1128—1168.
Louis VI. 1108—1137.
Adelaide Of Savoy.
Ingeburga Grand-daughter of Vladimir, Grand Duke of Russia.
Canute Duke of Sleswig, and king of the Obotrites. Killed, 1131.
Baldwin V. Of Hainault, and VIII. of Flanders. 1171—1195.
Margaret
Isabella Countess of Courtenay.
Peter
Louis VII. 1137—1180.
Adelaide Of Champagne. Third wife of Louis, m. 1160.
Sophia Daughter of Serber, King of Sweden.
Vlademir I. His first-cousin by affinity. 1157—1181.
Maria de Champagne, niece of Philip Augustus.
Baldwin I. Emperor of Constantinople. Brother-in-law to Philip Augustus, whose niece he married. 1195—1205.
Henry I. Emperor of Constantinople. d. childless 1216.
Isabella First wife of Philip Augustus. It was through her that he traced his relationship to Ingeburga.
Yolande Third wife of Peter of Courtenay. Hence sister and cousin by affinity to Philip Augustus.
Agnes Heiress of Nevers and Auxerre.
Peter de Courtenay. Emperor of Constantinople. First-cousin to Philip Augustus.
Philip II. Augustus = 1st, Isabella of Hainault, daughter of Baldwin V. = 2nd, to Ingeburga, divorced 1193, taken back 1200. = 3rd, Agnes of Méran, who was sent away again, in order that Ingeburga might be taken back. 1180—1223.
Mary Daughter of Eleanor, the first wife of Louis VII. She was step-niece to her husband,
Henry I. Count of Champagne. Brother of Adelaide, his wife's stepmother.
Another son and five daughters.
Ingeburga Second wife of Philip Augustus. Divorced 1193, on the plea of affinity, through his first wife, Isabella of Hainault, but taken back in 1200, through the intervention of the Pope.
Canute VI. King of Denmark. 1182—1202.
Mary Married Baldwin I., brother-in-law to her uncle Philip Augustus

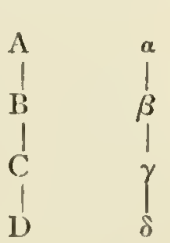
Sweyn II. was distantly related to his wife Gytha, the daughter of James Amund, King of Sweden. He was therefore compelled to divorce her by Adebert, Archbishop of Brema, and consequently had many illegitimate children.

Hence Philip was related to Ingeburga only through eleven degrees, of which two were mere affinity. This table shows also how much nearer were the relationships within which others of his family married.

To face page 120.]

a war against the Saxons. The ceremony for christening was fully prepared, the company and the priest were waiting, but the lady who was to have stood godmother, having been gained over by Frédégonde, was absent. The queen could not conceal her vexation at this untoward event. 'What prevents you holding the infant yourself?' said the perfidious Frédégonde, 'and to its love for you as a mother it will add the love of a godmother, which otherwise it would bestow on a stranger.' Audouère fell into the trap, ignorant of the canon on which her rival had founded her plan, which decrees that god-fathers and god-mothers contract with the parent of the child an alliance which prohibits all others. Frédégonde hastened to inform the king, on his return, that he was free to marry whom he pleased; and Chilperic, as superstitious as he was licentious, compelled his wife to enter a convent, banished the bishop who had performed the ceremony, and crowned the plot of Frédégonde by making her his queen.[1]

This monstrous canon first appeared under the auspices of the first Nicene Council, A.D. 325, by which marriage was prohibited with a wife's god-daughter, god-child, or bridesmaids; or with the mother, sister, or daughter of a god-child.[2] It appeared in the 'Institutes' of Justinian, A.D. 529, and by the Council of Trullo, A.D. 692, marriage with a relation by god-parentage was forbidden within the seventh degree, but only in the right line descending. Hence, as the Greeks reckon by the old Roman, or civil method supposing α to be god-parent to B; B, is considered a brother to α's daughter β; and only when they come to the generation D, δ, supposing no other alliance has been contracted by their relatives, would intermarriage between the two lines be allowed. The same prohibition was enacted in the West by the council held at Rome, A.D. 721. Pope Zachary, A.D. 745, and the Council of Mentz, A.D. 813, confirmed these prohibi-



[1] *Biog. Univ.*

[2] Evidence of the Rev. A. P. Percival, *Royal Commission on Marriage Law*, 1848, Question 317.

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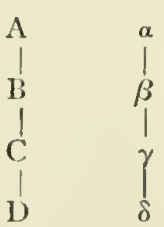


[1] *Biog. Univ.*

[2] Evidence of the Rev. A. P. Percival, *Royal Commission on Marriage Law*, 1848, Question 317.

tions.[1] The result was exemplified in the divorce of Audouère, and in the divorce of a man in the ninth century for the same thing; but this last case was pardoned by Pope John VIII. Innocent III. confirmed these prohibitions again. The Council of Trent, A.D. 1545–1563, did the same; and further declared that the person baptized, his parents, god-parents, and the priest who baptized him were as much interrelated as though they were relatives by blood to each other. Accordingly no tolerably near relative of the priest could marry the god-relations or relations of any child that priest might have baptized.[2] Boccaccio touches on these prohibitions more than once, and ridicules the idea that marriages of this sort were sinful.[3] Before the Council of Trent, A.D. 1545–1563, fornication with any relative within the fourth degree of the bride would prevent the marriage, but this Council reduced it to the second degree.[4]

By the fourth Lateran Council[5] marriage was again permitted outside the fourth canonical degree, that is, marriage was permitted beyond the degree of third-cousins; and such is the nominal law at the present time wherever the canon law prevails.[6]

[1] Evidence of the Rev. W. Palmer, *Royal Commission on Marriage Law*, 1848, p. 54; Evidence of Dr. Pusey, *ibid.* Question 447.

[2] See Pierrot's *Univ. Lexikon*, art. 'Ehe'; The *Encyc. Méthod.* art. 'Affinité'; and also the *Algem. Encyc. der Wissenschaften und Künste.*

[3] In the one case, Madonna Agnesa replies to the advances of Frate Rinaldo, her *compadre*: 'Egli sarebbe troppo gran male; e io ho molte volte udito che egli è troppo gran peccato.' Her compadre, however, proves to the satisfaction of his god-daughter 'che loica non sapeva,' that this was not the case (*Novella III. Giornata Settima*). Again, Tingoccio was in love with his *comare*, but kept this love secret from his friend Meuccio, 'per la cattività che a lui medesimo pareva fare, d' amare la comare; e sarebbesi vergognato che alcun l' avesse saputo.' His friend, however, who was also in love with her, finds it out. Tingoccio dies; and according to a promise comes as a ghost to tell his friend about our future life. He assures him that no account is taken in the next world of these sort of unions (*Ibid. Novella X.*) Voltaire aptly expresses the surprise of an *Ingénu* untutored in the subtleties of priestly legislation: 'Morbleu, mon oncle, pourquoi serait-il défendu d'épouser sa marraine, quand elle est jeune et jolie?'

[4] Evidence of the Right Rev. N. Wiseman, D.D., before the *Royal Commission on Marriage Law*, 1848, Question 1203.

[5] November 1215, the twelfth General Council.

[6] The civil law permits marriage in the fourth degree, or between first-cousins; the canon law only permits marriage outside the fourth degree, that is, third-cousins are forbidden to marry. Hence, according to Taylor (*Elements of Civil Law*, p. 331), has arisen among the common people an idea that, though first-cousins may marry, second-cousins may not; a belief which Samuel Dugard, writing in 1673, mentions as a common belief, and which appears even nowadays

In France marriages are prohibited in the direct ascending or descending line, as well as between brothers and sisters, whether legitimate or illegitimate. Marriage between uncle and niece, aunt and nephew, or brother and deceased wife's sister, may be permitted by the Government. Adoption is no obstacle to marriage, but affinity by marriage is as prohibitory as the blood relationship it simulates, and step-children are forbidden to marry a step-parent.[1]

Marriages are prohibited by the Italian civil code, in the direct ascending or descending line, and in the collateral line between brother and sister, aunt and nephew, or uncle and niece. Illegitimacy does not affect these prohibitions. Relationship by affinity or adoption in the direct ascending or descending line, or the first collateral degree, is considered to be true relationship, and marriage within those degrees is prohibited; but the king may permit marriage between relatives by affinity, or between aunt and nephew, or uncle and niece, if he chooses.[2]

By Spanish law the old canonical prohibitions are still in force. All persons related in the ascending or descending line, and all persons of the collateral line related within the fourth canonical (or eighth civil) degree, are forbidden to intermarry. Relationship by affinity, by carnal knowledge, or by god-parentage is considered to be the same as blood relationship.[3]

In Portugal the same canon law prevails, but in both countries dispensations are obtainable. Thus, in 1826, the two claimants of the crown, Donna Maria da Gloria, and her uncle, Dom Miguel, proposed to settle their claims by marriage.

hardly to have died out (see Dugard's *The Marriages of Cousin Germans Vindicated*, pp. 91-94, and Mrs. Beeton's *Book of Household Management*, 1869, p. 1134, § 2856)—a curious instance of the extent to which our common sense may be misled by the influence of custom.

[1] Adam, *Fortnightly Review*, 1865, p. 722.

[2] *Codice Civile del Regno d'Italia*, lib. i. tit. v. 58, 59, 60, 68. Cardinal Wiseman asserted before the *Royal Commission on Marriage Law of* 1848 that marriages between cousins hardly ever occurred in Italy, since they are contrary to the canon law (see p. 107, Question 1194). This, however, does not seem to be the case, since Signor Mantegazza appears to have found no difficulty in collecting cases of these marriages (see his *Studj sui Matrim. Cons.* pp. 20-26).

[3] Johnston's *Translation of the Spanish Civil Law*, pp. 50, 51, 128.

A dispensation was obtained from the Pope, and it would have taken place but for the alleged treachery of Dom Miguel.[1] The Vaquiros of the Asturian mountains habitually marry among themselves, and consequently have to buy dispensations for nearly every marriage.[2]

England, the first protestant country to alter the canonical prohibitions, is still the most conservative of all, not excepting her own colonies. The Anglo-Saxons, says Bede, did not hesitate to marry a father's wife.[3] By the code of Theodore, Archbishop of Canterbury, A.D. 668–690, marriage is forbidden with a mother, daughter, sister, niece, great-granddaughter, great-great-granddaughter, step-mother, step-daughter, mother-in-law, sister-in-law, god-mother, nurse, the wife or mistress of any relation, two sisters in succession, a maid betrothed to another, or, indeed, any relative within the sixth canonical degree.[4] According, however, to the 'Capitula et Fragmenta Theodori,' marriage is only forbidden in the third degree.[5] This discrepancy is probably to be explained by the supposed permission of Pope Gregory I. to the English to marry in the fourth degree; and the canon of Ecgbert, Archbishop of York, which says that though the canon law puts the limit at the sixth degree, for the very satisfactory reason that the creation lasted six days, yet St. Gregory permitted the English, seeing that they were as yet but neophytes, unhabituated to the curb, to marry in the fourth degree, so that they might be gradually accustomed to greater severity; just as the apostle says: 'I have fed you with milk and not with meat, for hitherto ye were not able to bear it, neither are ye yet able.' In the same way Pope Innocent III. permitted the Livonians to continue the levirate law, as formerly practised before their conversion.[6] On this account Ecgbert allows marriage in the fifth degree; in the fourth the parties need not be separated; but marriage within the third degree is

[1] Adam, *Fortnightly Review*, p. 722.
[2] Michel, *Hist. des Races Maudites*, ii. 43.
[3] Sharon Turner, *History of the Anglo-Saxons*, i. 125.
[4] *Liber Pœn. de Incest.* xx. in Thorpe's *Ancient Laws*, etc. pp. 286, 287.
[5] Thorpe, *ibid.* p. 317.
[6] Evidence of Dr. Pusey before the *Royal Commission on Marriage Law*, 1848, p. 45.

void, and the parties must be separated.[1] The English were, however, considered sufficiently steadfast in their faith at the beginning of the twelfth century ; for in the year 1102, at a great council convened at Westminster by Anselm, marriage was prohibited within the seventh canonical degree ;[2] and this prohibition remained in force till about the date of the Magna Charta, when marriage outside the fourth canonical degree was permitted.[3]

By the 25th Henry VIII. cap. 22, sec. 3 the prohibited degrees were declared to be the same as those mentioned in Leviticus, including a wife's sister ; and by this Act it was declared that neither the pope nor anyone else could grant a dispensation to marry within any one of these degrees. Liberty was however, left to the ecclesiastical courts to prohibit other marriages outside these degrees, or permit them as they chose. The 28th Henry VIII. cap. 7 repealed this Act, but the same prohibited degrees were re-enacted, with the modification that the religious ceremony does not constitute the validity of the marriage ; only the consummation does ; that therefore a man may marry his step-mother, uncle's wife, son's wife, or his brother's wife, provided that none of these marriages had been consummated. The same act confirmed the prohibitory relationship by affinity, if a marriage had been consummated, even if there had been no religious celebration. The power of the ecclesiastical courts to enact further prohibited degrees was not touched by this Act ; and the power of dispensation was left in the same state as enacted by the 25th Henry VIII. The liberty thus left in the hands of the Church to prohibit marriages outside the statutory degrees, or to allow them, just as they thought fit, was abused, as it had always before been abused. In the preamble of the 32nd Henry VIII. it says : ' Further also, by reason of other prohibitions than God's law admitteth, for their lucre by that court [the Pope's] invented, the dispensations whereof they always reserved to themselves, as in kindred, or affinity

[1] *Pœn. Ecgberti*, lib. iv. 39 ; *Confess.* 28, p. 354 ; *Excerp.* cxxxi. cxxxii. cxxxviii. cxl. cxlvi. in Thorpe's *Ancient Laws*, etc.

[2] Buckle's *Common Prayer Book*, Art. 110.

[3] See p. 122 of this work.

between cousin-germans, and so to the fourth and fifth degrees, carnal knowledge of any of the same kin or affinity before in such outward degrees, which else were lawful, and be not prohibited by God's law. (4.) And all because they would get money by it, and keep a reputation of their usurped jurisdiction, whereby not only much discord between lawful married persons hath (contrary to God's ordinance) arisen, much debate and suit at law, with wrongful vexation, and great damage of the innocent party hath been procured, and many just marriages brought in doubt and danger of undoing, and also many times undone, and lawful heirs disherited, whereof they had never else, but for their vainglorious usurpation, been moved any such question, since freedom in them was given by God's law, which ought to be most sure and certain.' The statute then declares [1] that 'all and every such marriages as within this church of England shall be contracted between lawful persons (as by this act we declare all persons to be lawful that be not prohibited by God's law to marry). (7.) Such marriages being contract and solemnised in the face of the church * * * shall be, by the authority of this present parliament, aforesaid, deemed, judged, and taken to be lawful, good, just and indissolvable. * * * (8.) And that no reservation or prohibition, God's law except, shall trouble or impeach any marriage without the Levitical degrees. (9.) And that no person of what estate, degree or condition soever he or she be, shall, after the said first day of the month of July aforesaid, be admitted in any of the spiritual courts within this the king's realm, or any of his grace's other lands and dominions, to any process, plea, or allegation, contrary to this aforesaid act.'

The law remained as defined by this Act for the remainder of Henry VIII.'s reign, and through that of King Edward VI., excepting that by the 2nd and 3rd Edward VI, cap. 23, the power of enforcing marriage upon sufficient proof of contract was restored to the spiritual courts, but 'that in all other causes and other things therein mentioned, the said former

[1] Cap. 38.

Act of the 32nd year of the late king, do stand and remain in his full strength and power.'

The first act of Mary, on her accession, was to legitimise herself by declaring (1st Mary, sess. 2, cap. 1), 'the Queens Hygness to have been borne in a most just and lawful matrimonie,' that the marriage of Henry VIII. with his deceased brother's wife was 'according to the pleasure of Almighty God,' that it was 'a most lawful and Godly concorde,' and 'that the same marriage in every dede, not being prohibited by the law of God, could not by any reason or equitie in this case be spotted, that it had its beginning of God, and by Him was continued, and therefore was ever and is to be taken for a most true, just, lawfull, and to all respects a sincere and parfitt marriage.' The Act annuls the divorce of Katharine, the Act of 25th Henry VIII. cap. 22, 'and every such clauses, articles, branches and matters contained and expressed in the foresayd Acte of Parliament made in the 28th year of the reign of the seyd late King, your father, or in any other Acte or Actes of Parliamente, as whereby your Hygness is named or declared to be illegitimate.' To this Mr. James Parker observes that since the marriage of a man with his brother's wife is expressly prohibited by Leviticus,[1] this Act was not itself consistent with 'God's law,' and that the marriage of Mary's parents alone was intended to be made lawful by this Act, because the marriage was under the Pope's dispensation, and the former marriage was said not to have been consummated. As for the first objection, this sort of marriage was not only allowed, but positively ordained when there were no children born, by the Old Testament, and permitted in other cases, provided two sisters were not married in succession, the latter in the lifetime of the former; an Act of Parliament would besides, even if this permission were contrary to the law as laid down in Leviticus, be amply sufficient to make such marriages legal. For the second objection, 'it should be observed that in this Act not one word is said of a dispensation from the Holy See, nor of want of consummation of the marriage between Prince Arthur and Catherine.'

[1] Chap. xviii.

The 1st and 2nd Philip and Mary, cap. 8, repealed so much of the 28th Henry VIII. cap. 7 as concerned the prohibition to marry within the degrees expressed in the said Act, as well as the whole of the 28th Henry VIII. cap. 16, and the 32nd Henry VIII. cap. 38, and others, which took away the ancient power of the Pope and spiritual courts over the law of marriage. At the end of Mary's reign, therefore, a man was prohibited marriage with a mother, sister, granddaughter, half-sister, or aunt ; with a step-mother, daughter-in-law, or uncle's wife, if the marriage which constituted the relationship had been consummated. Marriage with a daughter or grandmother is not mentioned, but that they were unlawful is implied, as it is in the Old Testament,[1] whence these degrees are taken, and by the fact that marriages beyond these degrees are forbidden. For if a man may not marry his granddaughter, neither may he marry his own daughter ; nor if he is forbidden marriage in the second degree in the descending line, is it likely that he is permitted to marry in the same degree in the ascending line ? Similarly, marriage with a niece was forbidden, because marriage with an aunt was.

These prohibited degrees were left as they stood by the 1st Elizabeth, cap. 1 ; for though the 28th Henry VIII. cap. 16, and 32nd Henry VIII. were revived, yet in neither of these Acts is there any definition of the prohibited degrees, nor were they interfered with even by the Act which declared Elizabeth's title to the crown.[2]

Archbishop Parker published a table, on his own authority, in the year 1563, which was of no legal value at the time, but received authority in the year 1603, from the 99th canon in ecclesiastical courts. This canon declared that no person shall marry within the degrees prohibited by the laws of God, and expressed in a table set forth by authority in the year of our Lord 1563, and all marriages so made and conducted shall be adjudged incestuous and unlawful, and consequently

[1] Leviticus, xviii. 6–18 ; xx. 21 ; Deuteronomy, xxv. 5, 6.

[2] Chief Justice Vaughan 'evidently was not aware of the statute 1st Mary, Sess. 2, cap. 1 * * * as expressly repealing the 28th Henry VIII. cap 7.' Hence the authority relied upon by Mr. James Parker does not hold.

shall be dissolved as void from the beginning, and the parties so married shall by course of law be separated. And the aforesaid table shall be in every church publicly set up and fixed at the charge of the parish.' One of these tables, of the date of 1677–8, and signed by the Bishop of London, which I possess, states that on the authority of this canon, of the Roman law, and 'by divers necessary consequences, from likeness, parity, or majority of reason,' the marriage of a man with the wife of his brother—that marriage which is enjoined by the Bible, and most particularly permitted by the statutes of England—'to be incestuous; and all children begotten of such marriages to be illegitimate, or bastards, to all intents and purposes.' Such does the law of England remain to this day, with the exception that, by Lord Lyndhurst's Act, marriages between a man and his deceased wife's sister which before were only voidable are now null and void from the beginning.[1] The repeal of this wicked law has been attempted year after year ever since in vain; yet only two objections have been made to this repeal, namely (1) The supposed scriptural prohibition of such marriages, and (2) the alleged social convenience of the present state of things. The first we shall not consider, since to all intents and purposes it has been abandoned. No man whose mind is open to conviction can help admitting that such evidence as is contained in 'Opinions of the Hebrew and Greek Professors of the European Universities,'[2] is decisive, while with those whose minds are not open to conviction argument is useless. Some, indeed, do not lay much stress on the precise meaning of the words in Leviticus, but urge that the code given there and in Deuteronomy stands for a perpetual and divine code to all nations, that the Canaanites were exterminated (which they were not) for not obeying it

[1] The reader should consult the *Report of the Royal Commission of* 1848, on the amount of misery and contempt of the law produced by this canon, and the bad interpretation of the law on this subject. I am indebted for my information to the same Report, Appendix, Art. No. 7. Also to John Fry, *The Case of Marriage between near Kindred*, etc. 1773, pp. 121–146; Samuel Dugard, *Vindication of the Marriages of Cousin Germans*, 1673, p. 90; and *The Case of Mr. Emmerton and Mrs. Bridget Hyde*, etc. 1682: London, printed for Richard Baldwin, pp. 31 43.

[2] Published by the Marriage Law Reform Association, 8vo. London, 1882.

(which they could not), and that all relationships by affinity are identical with the same degrees of relationship in blood.[1] All this, I say, I do not mean to discuss. If the Canaanites were exterminated for marrying their sisters-in-law, why were not the Egyptians and the Persians, the Indians, most savages, and the Jews themselves? If all relationships of affinity are prohibited, as are blood relationships, why may two brothers marry two sisters, or (what is really objectionable) a father and son marry daughter and mother?

On the other question, however, or the expediency of forbidding such marriages, some observations may be useful, since in the experience of many of the rich men who make the laws they have found the convenience occasionally of having a sister-in-law to keep house for them, and are ignorant of the hardships the law inflicts upon those poor people who do not choose to disregard it. This, though they do not recognise it, is the selfish motive, that for the sake of their own comfort they interfere with the comfort and just freedom of a greater number than themselves, and to justify it even to themselves they must be able to substantiate their four allegations that—

1. No sister-in-law could be as a sister to her sister's husband were marriage between them ever permissible.

2. That sisters-in-law cannot produce jealousy in wives under the present law.

3. That sisters-in-law can, without scandal, keep house for their deceased sister's husband.

4. That, were brothers and sisters-in-law permitted to intermarry, there would be less brotherly and sisterly freedom among them than at present, or more scandal.

They would also do well to show that—

5. The present state of the law does not open abuses in—

a. Litigation.
b. Seduction.
c. Repudiation.
d. Bigamy.
e. Heritage.

6. Explain how it is that we and the Russians are so much

[1] Bishop Wordsworth.

more virtuous than all the rest of the world, including our own colonies and Jersey, in forbidding such marriages.

7. Show that the present law is obeyed as a rule, and is not contemptuously disregarded, save by those who abuse it, as mentioned in No. 5.

An ounce of fact is worth a pound of theory on a practical question like this. I shall therefore give a few cases I have come across within the last few years in the 'Times.' Statement No. 1 supposes a state of things that does not at present exist; everyone will therefore interpret it according to his private experiences. That cousins and friends live together with all the familiarity of brothers and sisters-in-law, no one will deny; while, on the other hand, that the mere fact of marriage into a family does, in even two-thirds of the cases, put a man on equal terms of familiarity with his sisters-in-law as with his own sisters no one will be bold enough to assert.

To statement No. 2, I may cite the following: A woman was brought up at the Marlborough Street Police-court for throwing vitriol over her husband, whom she suspected of being too intimate with her sister;[1] and another case where an inquest was held on a woman whose husband was a dispenser at a hospital, and she, being of 'violent temper,' and moved to wrath at his undue attentions to her sister, had already frequently threatened to commit suicide, and twice actually had taken poison from the dispensary so conveniently at hand. Her husband, far from resenting these imputations, used every means in his power to preserve her life. He locked the dispensary and hid the keys, but the unhappy woman nevertheless contrived, after expressing her jealousy in the most violent terms possible, to procure a dose of morphia, and thus shuffle off her mortal coil. Her husband admitted that she had some 'slight cause for jealousy, but not to the extent to which she went.'[2] In another case a lady brought a suit of divorce against her husband. On her father's death her younger and only sister had come to live with her, and two years afterwards she and her brother-in-law eloped together. The lady had before observed a change in her

[1] See the *Times*, November 26, 1872. [2] See the *Times*, July 12, 1877.

husband's behaviour to her, but not being of a jealous disposition she had no suspicion of his intimacy with her sister.[1] The frequent divorce cases are sufficient evidence not only that sisters-in-law under existing conditions produce jealousy, but also that jealousy frequently has reason on its side.[2]

These cases further show clearly enough, despite all statements to the contrary, that, whatever may be individual experience, a sister-in-law cannot live with her brother-in-law to keep house for him. There is a case,[3] where we have the Vice-Chancellor (Sir Richard Malins) saying: 'He could not think it proper that any gentleman should continue to live with his deceased wife's sister. In this case there appeared to be no other woman in the house except the two maidservants, and it was evident that suspicions were entertained as to the nature of the intimacy which existed between these two people. Under such circumstances the father's house could not be a fit place for the residence of the infant; therefore he proposed to make an order that unless the wife's sister took her departure from the house the infant should be removed and given into the custody of some fit person with whom she could reside.'[4] In the end she had to leave her brother-in-law's house.[5] Again, in another case[6] the learned judge said: 'It had been argued, by the learned counsel for the respondent, that there was nothing to be inferred adverse to their characters from their extraordinary intimacy, inasmuch as they were brother and sister-in-law, and could not intermarry with each other. It was quite true that the law did not allow of marriage by a man with his deceased wife's sister, but it was to be observed that the law was based upon the assumption that persons so connected might have an inclination towards and entertain the passion of love for each other.' The law, then, forbids these marriages, because it quite sees that without this prohibition these marriages would take

[1] The *Times*, May 10, 1880.

[2] *Ibid.* April 10, 1876; *ibid.* July 19, 1878; *ibid.* November 14, 1879; *ibid.* May 15, 1876; *ibid.* November 29, 1877; *ibid.* November 20, 1870; *ibid.* May 5, 1877; *ibid.* November 7, 1879; *ibid.* January 28, 1875; *ibid.* May 16, 1877; *ibid.* December 5, 1878.

[3] *Ibid.* January 19, 1880.

[4] *Ibid.*

[5] *Ibid.* January 26, 1880.

[6] *Ibid.* May 15, 1876.

place; but at the same time it admits that brothers and sisters-in-law cannot live together as brothers and sisters, and that their behaviour must be as guarded as though they were cousins. In other words, their relationship but gives the excuse to the world of an introduction, or nothing more than were they permitted to marry.

And now let us look at the objections to the law. We have seen that it fails in its main object of making artificial brothers and sisters, but those who uphold it argue that in some cases it makes real brothers and sisters—at least a fair imitation. Should the law then only make a great many people miserable, for the simple reason that they honour and obey the law, we, the world in general, can look on very philosophically.

Unfortunately no one can escape from the evil effects of a bad law, and of all legal ties that of marriage is the most important to the whole community. On the one side it is bound up with property in general through inheritance; on the other, it is so intimately connected with the practice of morality that we always find the decadence of nations has been preceded by neglect of the marriage tie. A moment's consideration will convince anyone that the growth of nations, the right education of youth, and the well-being of the population depend upon the honour in which marriage is held; but those who have no difficulty in seeing this do not always see that where a law is held in little estimation it will very likely lead to contempt, and when a law is held in contempt even good people will confound the bad with the good parts of it, and, despising the prohibition of a marriage which seems unobjectionable, will go on to despise marriage itself. The greater number of our laws have only been repealed long after the whole nation has behaved as if they did not exist, and therefore to say that this prohibition shall not be repealed, simply because this repeal will gratify those who have broken the law, is little more than childish. You cannot punish a man even at present for marrying his deceased wife's sister, nor would it be possible for the most ingenious legislator to contrive an effective punishment;

but to make that illegal which cannot be punished is not only useless but impolitic. We have had many laws dealing with matters that we should like to regulate, but the merest tyro in legal history knows that moral conduct cannot be regulated by laws, and that where the law meddles ineffectively it surely muddles, becoming ridiculous in some cases and harmful in others.

Now, what is the effect of this particular law? That it is ineffective in preventing marriages between brothers and sisters-in-law is generally known, though few people know how generally. That it leads to seduction is sufficiently obvious, because giving as it does a false security to some people, seduction is a natural consequence. The divorce cases already given during the few years under our observation sufficiently show this, but there are many other cases I could cite,[1] given in metropolitan papers alone, besides others, which illustrate other evils. One of these is the facility given to bigamy, of which an instance is afforded by a gentleman of the name of Sullivan, before Mr. Commissioner Kerr on that charge. Mr. Sullivan, however, pleaded that his first wife, being the widow of his brother, had at present no legal right to the title of wife, and the jury had no choice but to agree with the prisoner that he had a perfect right to two wives. The first lady thereupon inquired who *was* the innocent man's wife? a question which Mr. Commissioner Kerr either could not or would not answer.[2] Another frequent result of the present state of the law is repudiation. One case became public at the Marylebone Police-court,[3] another at the Hammersmith,[4] and again another at the same court.[5] In all these cases there were children of the illegal marriage, and in all, the father, finding the support of his offspring a burden, had repudiated his wife and cast her off. In another case a deceased wife's sister was induced to go through the ceremony of marriage with her brother-in-law, and, after living

[1] See, for instance, a case brought before Mr. Watson at the Marlborough Street Police-court, given in the *Times*, May 25, 1877. Another before Mr. Balguy at Greenwich, *ibid.* November 7, 1882.

[2] The *Times*, November 23, 1871.

[3] *Ibid.* April 14, 1875.

[4] *Evening Standard*, May 25, 1880.

[5] The *Times*, December 20, 1880.

with him for about two years and a half, he turned her out of doors.[1] By these means, with the aid of the law, he saved a housekeeper's wages for the space of two years and a half. There is another case where the parties 'agreed' to separate, and consider their marriage annulled;[2] and indeed, the law, if it does nothing else, vastly simplifies the work of the divorce court; there are, indeed, many instances[3] how much better it is to marry one's deceased wife's sister or husband's brother than anybody else, if the parties are fond of change and would avoid the irksome restraints of the law.

The effect on property is illustrated by the following case from Ireland. A society had existed for the purpose of paying life annuities to the widows of constabulary officers, and one of the conditions was that a widow remarrying should forfeit her annuity. The society had been ordered to be wound up, and in the course of the proceedings the annuities were capitalised, and a proportionate share given to each annuitant. Now, among these was one lady who had no idea of remaining a widow, but, on the other hand, neither had she any idea of giving up her annuity. The solution of the problem, thanks to our law, was of the simplest. To make matters nice and comfortable she obtained a dispensation from the Pope; she then married her deceased sister's husband, retained her capitalised annuity, and, I presume, lived in comfort and affluence ever afterwards.[4]

I have asserted that it is impossible for any legislator to prevent the marriage of brothers-in-law with their sisters-in-law by any legal penalty; but since this statement may be challenged by some who believe that laws are all-powerful, a few more words on the subject may be useful. It is generally conceded that concubinage is beyond the reach of the law. This is not a supposition; the law has frequently tried, and in every possible way, to suppress it, and in every case has

[1] The *Times*, March 10, 1880. [2] *Ibid.* January 11, 1883.

[3] *Ibid.* November 16, 1877; February 28, 1878; and *Pall Mall Gazette*, January 25, 1875.

[4] See the *Times*, February 9, 1876. I may add that the legacy duty on a bequest by a man to his sister-in-law is ten per cent., as to a stranger in blood; while, in the reverse case, the duty on a legacy bequeathed to a brother-in-law by his sister-in-law is three per cent., as to a very brother.

only succeeded in making matters worse. The living together then of brothers and sisters-in-law, we may accept, is not to be prevented by any law whatsoever. That bigamy and polygamy are prevented by law is no argument (although it may seem to be), because bigamy and polygamy are only prevented by the law when one of the parties does not consent. The cohabitation of a man with two women is not, and cannot be, punished ; but a false representation by which a man induces a woman to live with him as his wife, while he has another wife living, is punishable, because one of the parties has been deceived. In the same way the wife can punish her husband by divorce (an inadequate and weak punishment at the present day) when he fails to carry out the contract into which he has entered. You might attempt to punish marriage with a deceased wife's sister when the marriage ceremony had been gone through, but the only result would be either that the parties would cohabit without going through the ceremony, or that they would go through the ceremony abroad. Baffled in this way, the law stigmatises the innocent children, and gives either of the sinning parties the power of doing further evil by deserting the other.

Those indeed who still oppose the marriages we have been discussing must needs possess a confidence in the justice of their cause, which it is not given to most people to have in anything. Any interference with private liberty is bad in itself, and only to be enforced when the enforcement is not a farce, and those who carry it out are assured that they are doing right. In this case not only is the British law alone in the comity of nations with one exception, and that the most backward of them all, but one by one, despite affection and tradition, despite the same education, code of laws, and constant influx of new reinforcements from the old country, our colonies have in succession thrown off this prohibition and ranged themselves upon the side of the world in general. To set up an accidental law (for Lord Lyndhurst's Act was nothing but an accident as it stands) against the wisdom of the world, to say that that law is right, and that all laws contrary to it are wrong, to arrogate to ourselves a purity in reli-

gious feeling and morality beyond what our colonies and America and the other civilised countries can show—against a mass of opinion like this, against the arguments of every-day life, against the opinions of the greater part of their countrymen, the belief in the justice of the prohibition of marriage with a deceased wife's sister must be more robust than we hold it to be if it can stand.

By the Prussian law marriages in the direct ascending or descending line, or between brothers and sisters, whether by half or by whole blood, are forbidden, whether these relationships be legitimate or illegitimate. Step-parents, or step-brothers and sisters, are considered to be blood relatives. Hence the marriage of uncle and niece is permitted, and there is no prohibitory relationship by affinity, except in the direct ascending and descending line. The Rhenish provinces are under the Code Napoléon, with the exception that a man is permitted to marry his sister-in-law, and that it is necessary to get a sort of formal permission from the Church to marry a niece. Such marriages, however, occur but rarely. They were freely allowed in Würtemburg, but not in Hanover.[1]

The law of Holland adds to the Prussian prohibitions marriage between brothers and sisters-in-law, between an uncle or a grand-uncle, and a niece or grand-niece; and marriage between an aunt or grand-aunt, and nephew or grand-nephew, whether the parties be legitimately related or not. The king may, however, permit these marriages.[2]

In Sweden marriages within the third civil degree are forbidden. A man may marry his sister-in-law by special permission of the king; and a few years ago, says Mayhew, writing about the year 1862, a law was abolished requiring the same formality for the marriage of first-cousins.[3]

In the United States of America the prohibited degrees vary somewhat in different States. In the State of New York there was formerly no statuted efining these degrees.

[1] Evidence of A. Bach, Esq., before the *Royal Commission on Marriage Law of* 1848, pp. 84-86. By the new law of 1875 the prohibited degrees of all Germany are assimilated to the Prussian law. [2] *Ibid.* p. 86, note.
[3] Mayhew's *London Labour and London Poor*, ii. 175.

By the Revised Statutes of 1830 marriage in the direct line, or between brothers and sisters of half or whole blood, is forbidden. In Louisiana marriage is forbidden with an aunt or niece, and in Indiana and Kentucky the marriage of first-cousins even is said to be prohibited.[1] M. Devay asserts that these marriages are also forbidden in Ohio, but this has been shown by Mr. Darwin to be false ;[2] there was merely an Act passed in the year 1855 or 1856, to ascertain the number of deaf-mutes, blind, insane, etc., and the relationship of their parents to each other, if any.[3] The Mormons allow marriage with all a wife's sisters, with mother and daughter, with a half-sister, or with a step-daughter. Brigham Young himself married a mother and daughter, and MM. Remy and Brenchley give an instance of an indignant Mormon turning his first wife out of doors because her daughter, his step-daughter, refused to share that portion of his heart and hand he was able to offer to her.[4]

Though never so severe as the Roman, the prohibitions of the Greek Church were much more inflexible, and therefore not nearly so demoralising. They permitted the marriage of second-cousins, according to Theodorus, who wrote A.D. 668—about the same degree that was permitted by the Roman Church of that time. Like the Roman Church, however, they got more severe under the influence of asceticism, for by the Council of Trullo, A.D. 694, they forbade the marriage of relations within the seventh degree, that is, third cousins were allowed to marry, but no parties more nearly related ; and, like the Roman Church, they held that relationship by affinity, adoption, or god-parentage were equally bars to intermarriage with true relationship. At this time the Roman Church was beginning to launch out upon far wider prohibitions, but the Greeks remained fast to theirs, uninfluenced by

[1] *The Lancet*, April 4, 1868, p. 456 ; J. A. N. Périer, *Mém. de la Soc. de Anthrop. de Paris*, 1863, i. 230 ; Adam, *Fortnightly Review*, November 1, 1865, p. 723.

[2] Devay, *Du Danger*, etc. p. 141 ; Darwin, *Animals and Plants under Domestication*, ii. 102, note.

[3] Bemiss, *Journal of Psych. Med.* etc. p. 378, April 1857.

[4] Remy and Brenchley, *Journey to Great Salt Lake City*, ii. 139, 152, 165.

the extravagance of the sister Church. The consequence was that, though the people occasionally disregarded them, as is shown by the excommunications of John the Good, A.D. 1079, on all those who had married their cousins, yet, since these prohibitions were neither so severe as the Roman nor so often altered or permitted by dispensations, the people began to look upon them as divine laws, and, as such, to wish for no change.[1]

The Russian practice at the present time is the same as that of the Greek Church, and the legal obstacles, says Mr. Wallace, 'are not always easily avoided in a small village, the inhabitants of which have been long in the habit of intermarrying.'[2] There was, however, and perhaps still is, a practice in some parts of Russia for a son's wife first to be married temporarily to his father.[3] McLennan says of the Muscovites and Livonians that we have no certain information on their marriage law; but that it is implied by Magnus that husband and wife invariably belonged to different kinships or village communities.[4] Quite lately a law has been brought in legalising civil marriages between dissenters by birth in Russia; but even here the Greek prohibitions are in force.[5]

[1] See the Evidence of Dr. Pusey, *Royal Commission on Marriage Law*, 1848, p. 41; also the Evidence of the Rev. W. Palmer, pp. 54–57, *ibid.*; and Reich's *Ehe*, etc. p. 98.

[2] Wallace, *Russia*, i. 138, 139.

[3] Taylor's *Biblical Fragments*, appended to Calmet's *Dictionary of the Bible*, iii. 196. London, 1847. A custom analogous to that of the Indians of Darien. See Reich's *Ehe*, etc. p. 408; and *Pall Mall Gazette* for August 7, 1877, p. 4.

[4] McLennan, *Primitive Marriage*, p. 131.

[5] See the *Pall Mall Gazette* for September 11, 1873; and the *Times* for October 5 and November 6, 1874.

CHAPTER IV.

OBSERVATIONS ON SOME ISOLATED COMMUNITIES WHO HAVE CONSTANTLY MARRIED AMONG THEMSELVES.

IN the preceding chapters we have seen that no deduction as to the harmfulness of marriages between near kin can be drawn from the fact that nearly all mankind have certain prohibited degrees, and it remains for us to discover by observation whether these marriages are really harmful. We shall therefore consider a set of cases where such marriages have occurred constantly in communities for so long a time that the effects for evil, if any, must show themselves; at the same time, however, we cannot ascribe every disease observed in these isolated communities to consanguineous marriage, because we cannot point to one particular factor where many are present, and say this is the cause, and no other; but if we see people constantly contracting these marriages, and find they do not suffer from disease more than other communities who seldom marry near kin, then we may justly reason that these marriages are, in fact, harmless.

In the year 1789 a mutiny occurred on board the royal ship 'Bounty,' which has now become famous. The 'Bounty' had been sent out, under the command of Lieutenant Bligh, to make further observations among the South Sea Islands, and to obtain the breadfruit tree from the natives; but, in consequence of Bligh's temper, the beauty of the climate, combined with the prospect of an idle life, and the contrast of such a life with the hardships a sailor is compelled to undergo, a part of the crew were so tempted that they determined

to seize the ship at all hazards. How some of them escaped to Otaheite, some were killed, and some were taken and brought to England, it is unnecessary to relate—the 'Bounty' was carried away from Otaheite by nine of the mutineers, who brought with them six men and twelve women, natives of Otaheite, and landed on Pitcairn Island, which before their arrival was uninhabited. But they soon began to quarrel. One of the mutineers having lost his wife by an accident took away the wife of one of the natives, who, indignant at such treatment, laid a plot to murder all the whites. This plot, however, was discovered by the women, and the injured husband with another native was treacherously slain. Cowed but thirsting for revenge, another plot was laid about a year or two after by the natives to free themselves from their slavery, which proved only too successful: five whites were killed, only four escaping. Then the women rose, and murdered all the natives; and thus out of nine white men, six native men, and twelve native women who landed early in 1790 only four white men and ten or eleven native women remained alive in October 1793. From this time for about five years things went on smoothly, excepting that one of the men killed himself in a drunken fit; but in 1799 another man lost his wife, and insisted on taking the wife of one of his companions. The husband resisted, the widower sought to murder both him and his wife, whereupon the husband with his remaining companion killed the would-be murderer to secure their own safety. A year after one died of asthma, and the other, Adams, remained the only man on the island.

Thus, in the year 1800, the population consisted of one man, five women, and nineteen children, the eldest nine years old—in all twenty-five persons. In 1808 Mr. Folger makes the total thirty-five. In 1814 Sir Thomas Staines found the population consisted of about forty-six persons, mostly grown-up young people, besides a number of infants. 'The young men (all born on the island) were very athletic and of fine forms, their countenance open and pleasing * * * but the young women were objects of particular admiration—tall, robust, and well formed.' In 1825 there were, according to Captain

Beechey, thirty-six males and thirty females, or a total of sixty-six persons. In 1830 Captain Waldegrave makes the total seventy-nine, showing an increase of thirteen in five years; yet only three strangers had joined the little community, nor had these joined long before.

In 1831, water being scarce, the community now numbering eighty-seven, were removed to Otaheite, but, sober Christians as they were, the manners of the Otaheitans shocked them; moreover, the climate disagreed with them and they longed for the home they had left. Twelve of them died, and the remainder returned to Pitcairn before 1833, five more dying immediately after their return. About the year 1853 the crops failed, and the semi-starvation caused general weakness. In 1855 Captain Freemantle found the population numbered 187, all being natives but three, and, omitting the foreigners, having only six surnames among them. In 1856 they numbered 194, and since Pitcairn could not support so many, all were removed to Norfolk Island. In 1868 some of them again returned to their beloved Pitcairn, and a shipwrecked crew reported their number as seventy-three in the year 1875, all being natives save one who had married a Pitcairn girl while at Norfolk Island. As usual, they are described as strong and handsome; only one was ailing, probably from scrofula and consumption. The same year H.M.S. 'Petrel' visited them, and found thirty-six males, forty-seven females, the stranger, and one of the shipwrecked crew who had remained. Besides the two strangers there were only three surnames, and all were healthy then but one child which was scrofulous. In 1878 Rear-Admiral de Horsey found ninety people of all ages. The next year Captain F. Robinson found ninety-three people. The stranger, who was shipwrecked in 1875, had left, leaving two children behind him. Every one was in good health. At the end of 1882 there were 103 or 104 people on the island, of which sixty were females.

Those who remained on Norfolk Island, though strong, healthy, and handsome, are not so moral or industrious as their brethren of Pitcairn.

As to their health, all observers agree nothing could be better, that they are strong, and average six feet in height. Both sexes are well formed and handsome, and their children uniformly enjoy good health; while the women are almost as muscular as the males, and taller than the generality of females. Parturition was easy, seldom lasted over five hours, and had never proved fatal.[1]

There is a community established eastward of Surabaya, Java, on the Tengger Hills, and near the so-called Sandy Sea, consisting of some 1,200 persons, distributed in about forty villages, who still profess the ancient Hindoo religion. These curious people seem to live in a state of Arcadian purity. The chief of every village is appointed by election, and four priests, intelligent, though uncultivated men, have charge of the sacred writings. There is no penal code, for there is hardly any occasion for it—a reproof from the village chief meets every case. They live frugally, peacefully, and happily, are proud of their institutions and themselves; and therefore take care never to marry out of their own community; yet they are bigger and stronger than any other race in Java.[2]

A very remarkable case is given by Dr. Thibault of a Portuguese slave-dealer, named Da Souza, who died in the year 1849, at Widah, Dahomey, leaving behind him 400 disconsolate widows and about 100 children. By order of the king the whole of this family was interned in a particular part of the country, where reigned the most complete promiscuity. In 1863 there were children of the third generation; and Dr. Thibault, who verified the fact himself, asserts that at that time, although these people were born from all degrees of incestuous unions, there was not a single case of deaf-mutism, blindness, crétinism, nor any congenital malformation. Nevertheless it is probable that they are now decreasing in

[1] T. B. Murray, *Pitcairn: the Island, the People, and the Pastor*. London, 1857, pp. 124, 140, 226, 227, 241, 359, 363. The *Times*, March 26, 1875; April 20, 1876; December 4 and 17, 1878; November 19, 1879; and April 4, 1873. *The Eventful History of the Mutiny of H.M.S. 'Bounty,'* etc. London, Anon. 1831, pp. 302–307, 333, 334, 326–328. Their energy was strikingly shown on the visit of the *Pearl*. See the *Times* for November 21, 1874.

[2] Waitz, *Anthropologie*, i. 482.

number, for misery, debauchery, and syphilis co-operate to their destruction.[1]

Eten, two miles south of Monsefu, in Peru, a village situated in the middle of a desert, is inhabited by a race of people who have preserved the purity of their blood ever since the Spanish conquest. In face and form they strongly resemble the figures in Montero's picture of the obsequies of Atahualpa, nor does their dress differ in fashion from that worn three centuries ago. They number about 600, and always intermarry among themselves; indeed, every individual vows not to marry out of the tribe, and no one has ever been known to marry a stranger. Sometimes, owing to the difficulty in so small a community of finding suitable partners, even brother and sister intermarry. They look delicate, but are very healthy, with fine shapes, and some are very good-looking; their only defect is that their lower limbs are weak and childish, which is probably due to their sedentary and indoor life and total abstinence from field work. They labour week after week and year after year at their straw-plaiting and mat-weaving, holding little communion with anyone outside their own doors. Mr. Cole observed no cripples and no disease.

A few miles north of Eten lies the fishing village of Santa Rosa, the inhabitants of which number a few hundred, and also always intermarry among themselves; but brothers and sisters do not intermarry. The people are robust and healthy.[2]

But, besides these remarkable cases, there are many isolated populations even in the midst of crowded countries. Dr. Beddoe gives many instances of isolated communities in Great Britain. At Brighton the fishermen are said to be a separate caste; some assert them to be of Spanish origin. They intermarry among themselves, and are as robust and healthy as the agricultural population.[3] At Itchenferry, Southampton, the people are little given to intermarriage with their neigh-

[1] Thibault, 'Mar. Cons. dans la Race Noire,' in the *Archiv. de Méd. Navale*, Ann. 1864, i. 310.

[2] My authority for this account of Eten and Santa Rosa is Mr. G. R. FitzRoy Cole, and his *Peruvians at Home*. London, 1884, pp. 76–82.

[3] Beddoe, *Stature and Bulk of Man in the British Islands*, pp. 91, 171; and Sharp's *Gazetteer*, 1852, art. 'Brighton.'

bours. Some intermixture there has probably been with the Channel Islanders, but it does not appear to have been very great. They seem of average height, and if anything rather above the average weight.[1] The inhabitants of Portland Island, a hardy, tall, primitive race, seldom if ever intermarry with any on the mainland.[2] At Bentham and its neighbourhood, in the West Riding, Yorkshire, there has been, until quite lately, continual close intermarrying; yet the race is stalwart and long-lived, and very free from idiocy and insanity.[3] The fishermen of Staithes, a village about halfway between Whitby and Saltburn, were, until quite lately, completely cut off from all land communication. 'From time immemorial,' says a correspondent of the 'Times,' 'Staithes has been a fishing town, and inhabited by the ancestors of its present population.' The name of the town 'is an Anglo-Saxon word, meaning "landing-place," and the fishers still speak of the strand where they beach their cobles as the Staith. The fisherfolk are not migratory.' Though carried far and wide in the pursuit of their calling, north even to Aberdeen, and south to Penzance, 'yet their acquaintance with these places never induces them to change their homes, and, even as they themselves emigrate seldom or never, so do they receive but few aliens in their own town. One or two strangers, may be, have settled and prospered in the place, but they have not been numerous. One foreigner indeed, a native of Margate, named Verrill, found his way to Staithes some 150 years ago,' and 'now there are in the town a far greater number of distinct families bearing the name of Verrill than there are persons bearing any one of the old Staithes names. But this case is quite isolated.' The fisherfolk 'have so intermarried as to be all more or less closely related to one another. Yet this long continued intermarriage does not appear to have in any way deteriorated the physique of this hardy race of fishers, and is remarkable only by a certain family resemblance which characterises one and all of the natives of this place. The men are as well grown, athletic, and powerful, the maidens as straight and comely, and the

[1] Beddoe, *ut sup.* pp. 92, 93.
[2] Brand, *Pop. Antiq.* ii. 87; Sharp, *ut sup.* art. 'Portland Isle.'
[3] Beddoe, *Stature and Bulk*, etc. p. 55.

children as sturdy as could anywhere be found in the three kingdoms.' 'To a stranger the wholesale cousinship of the Staithes folk is a source of frequent misunderstanding and no inconsiderable embarrassment, for every man is known and spoken of by a sobriquet—a matter of necessity where so many bear the same name. Then, again, it is a common practice to speak of and address children by the maiden name of their mother.' 'So little commerce is there between Staithes and the inhabitants of the neighbouring fishing village, perched on the cliff side in Runswick Bay, some two miles to the southward, that the dialects spoken in the two places are so markedly distinct one from the other that even a stranger can distinguish by his tongue a Runswicker from a native of Staithes. Marriages do at times take place between the dwellers in either village, but in such cases the wife is known ever after as so-and-so from the other village, whichever it may be.'[1] In Cornwall there are villages so situated that marriages among blood relations are necessarily frequent. The villages of Mousehole and Newlyn, in Mountsbay, are instances; yet these people are by no means degenerate. Dr. John Davy asserts that there is only one case on record of any Stuart of Glenfinlass marrying out of the glen, and yet all the families were healthy. Nor in the Scottish islets, where marriages between near kin must necessarily occur, are the inhabitants at all degenerate, while consumption is rare.[2] This last is confirmed by the 'Medical Times and Gazette.'[3] 'We confess,' it says, 'that our experience—founded on a tolerably intimate acquaintance with the inhabitants of the fishing villages along the coast of Scotland, who are altogether a race apart, seldom if ever intermarrying with the peasants of the surrounding country, but to such an extent among themselves that it is nothing unusual to find only one or two family names in a village, the deficiencies being made up in nicknames—leads us to agree with Dr. Voisin,[4] for a hardier or more robust set of men and

[1] The *Times*, in an article on 'The Yorkshire Fishermen,' Sept. 7, 1885.
[2] Child, *Essays on Physiological Subjects*, pp. 50–53.
[3] November 24, 1866, pp. 573, 574.
[4] Who gives an account of the community of Batz. See pp. 160, 161 of this work.

women than these people do not exist.' At Boulmer, Alnwick, Northumberland, there is a fishing population of about 150 persons. How closely they intermarry may be inferred from the fact that with five exceptions all are named Stephenson, Stanton, or Stewart ; and, withal, they are rather above the average height and weight of the district.[1] The people of Burnmouth and Ross, Berwickshire, form a colony about 120 years old, first founded by smugglers with the sole view of security in their trade, and hence by no means favourably situated for health. The houses, though clean and orderly, are damp from their situation close to the sea at the foot of the cliff ; the population of these two connected villages is estimated at 420 persons : the men are tall and strong, of swarthy complexion, prudent, and sober ; the women are also tall, stout, and high-featured. Formerly they married strictly among themselves, but now they occasionally marry the daughters of the agricultural population who are in their service. At the time of Dr. Mitchell's investigation five of the married women had not been born in the place, and 'careful enquiry only brought to light seven marriages between full cousins,' and no case between second-cousins ; but there were many marriages between persons whose relationship was recognised, though distant. The result of these seven marriages was as follows:—

Case	No. of Children Born	No. of these Dead	No. yet Alive	Remarks on the Children
I.	6	3	3	Those alive were big, strong, sound, and healthy. Those dead were said to have been sound.
II.	6	—	6	'Never had a headache.'
III.	9	1	8	All are sound and sane.
IV.	1	—	1	Sound. Newly married.
V.	3	2	1	The living one is not robust.
VI.	5	1	4	All were sound.
VII.	5	—	5	All were sound.
Total	35	7	28	

Three out of the twenty-eight living children were married

[1] Beddoe, *Stature and Bulk*, etc. pp. 44, 45.

and to persons distantly related to them, with the following result :—

Case	No. of Children Born	No. of these Dead	No. yet Alive	Remarks on the Children.
I.	7	1	6	All of them healthy.
II.	6	2	4	All the living ones are sound. The two deaths were in infancy.
III.	—	—	—	Barren.

There were, in the whole population, only two imbeciles, both of whom were self-supporting, and neither was the child of blood relations. Besides these there were two cases of *acquired* insanity, both women. The disease in both cases resulted from grief and shock to the nervous system, caused by the sudden news of the death of their husbands by drowning. The parents of one of these women were distantly related. There was one case also of mild epilepsy, a child whose parents were not related ; there was no case of a lame, deformed, blind, dumb, or paralytic person to be heard of ; and in the school, which was twice visited, and where nearly all the children of the village were assembled, no strumous sores were found, nor were any of the children puny, pale, or languid, but, on the contrary, merry and active, though their teacher thought them slower and duller than other children he had had under his care. Dr. Mitchell adds that though none of the children of cousins were found defective, there was in the whole population a greater proportion of 'unsound' persons than the average for the whole of Scotland.[1] He does not, however, explain the nature of their 'unsoundness' ; and I presume that the unhealthy position of the villages must have some effect. This much is however plain, that the greatest grievances alleged to follow consanguineous marriages are here conspicuous by their absence, and that the people were generally healthy and strong—a fact which Dr. Beddoe confirms, and adds that the Eyemouth fishermen, of the same county, are also handsome and stalwart in the main, though

[1] Mitchell, *Memoir read before the Anthropological Society of London*, 1866. ii. 438–441.

they are a very isolated community.[1] At Boyndie, in Banffshire, and Rathen, in Aberdeenshire, the fishermen are a very closely interbred community, the former somewhat shorter and lighter than the landsmen, and their heads are not quite so big.[2] The fishermen of Buckhaven, Fife, are also closely interbred, but differ less from the agricultural community than do their brethren of Rathen and Boyndie. They are supposed to be the descendants of a Dutch ship's crew wrecked in the time of Queen Mary.[3]

The population of the two villages of Portmaholmack and Balnabruiach, Easter Ross, is estimated at 1,548,[4] of which 710 are married. Of these 355 couples, 62 are first-cousins and 20 second-cousins, or persons more distantly related. These 82 marriages between relations produced 340 children, or an average of a little more than 4·1 per marriage. Of these children 90 died, most of them under the age of ten years, making nearly 26·5 per cent. In the whole number of 340 children there were 2 imbeciles, 1 idiot, and 2 cripples, or nearly 1·5 per cent. malformed or diseased. There were besides 4 imbeciles, 2 idiots, 2 insane, and 2 cripples among the children not born from marriages between near kin.[5]

[1] Beddoe, *Stature and Bulk*, etc. pp. 42, 43, 171.

[2] *Ibid.* pp. 27, 171.

[3] *Ibid.* pp. 31, 171; Sharp's *Gazetteer*, 1852, art. 'Buckhaven.'

[4] In 1841 the population was only 646, which shows an increase of 902 in twenty-five years (Sharp's *Gazetteer*).

[5] Dr. Mitchell attempts to show from these 'data' that such calamities fall on the offspring of blood-related parents with greater frequency than on the offspring of parents not related, by means of a computation from the data of the productiveness and mortality of consanguineous marriages to supply the data wanting concerning the non-consanguineous marriages. To this end he puts the probable number of children born from 273 non-consanguineous marriages at 1,160, a mistake for 1,132, nearly; whence the probable number dead would at nearly 26·5 per cent. be about 300, leaving 832 alive. Of these it was known that 10 were malformed or diseased, making, if the data assumed be correct, 1·2 of the children born from non-consanguineous marriages malformed or diseased, as compared with 1·5 per cent. of those born from the consanguineous marriages, or a difference of nearly 0·3 per cent.; a small fraction indeed, and besides quite an unreliable deduction, seeing that many of the data are conjectural, and that the number altogether is so small that if a mistake were made in the collection of the facts (which is not at all improbable considering that the enumeration was not officila, and that the diseased are more likely to have been among the 300 dead) the balance might be on the other side. We shall, moreover, see later on that probably more children are born from consanguineous marriages than from others, and hence there would be fewer children born than the 1,132 here calculated, and

Dr. Mitchell gives his observations on another village, which he does not name, but which he says is situated 'on the north-east coast of Scotland.' The fishing population is estimated at 779, and contains 119 married couples, of which 11 couples are first-cousins, and 16 are second-cousins. Of these 27 marriages between near kin 3 are barren, and, from the remaining 24, 105 children were born, or nearly 4·4 for every fruitful marriage, and nearly 4 for all the marriages between near kin, including the barren ones. Of these 105 children 38 are dead (of which 35 deaths were in childhood), or 33·4 per cent.; 4 are deaf-mutes, or nearly 6 per cent.; 4 are imbecile, and 4 more 'slightly silly'; 1 is paralytic, or 1·5 per cent.; and 11, or a little over 16·4 per cent., were scrofulous and puny. The children of those who are first-cousins are described as '*all* of them neither strong in mind nor in body';[1] but Dr. Mitchell says nothing about the results of the marriages of those who were not related, without which the above facts are of no value whatever, except to show, as Dr. Mitchell observes, that there must be more than the average causes of idiocy at work in this community.

Berneray, situated at the west of the isle of Lewis, contains a population of 427, in which there are 74 married couples. Of these 74 couples 2 are first-cousins and 6 are second-cousins. From the first two 10 children were born, of which 8 are yet alive; from the other six 20 children were born, of which 18 are still living; making an average of 3·75 children per marriage, and a mortality of 13·4 per cent.; and yet no one of these 'is either insane, imbecile, idiotic, deaf, dumb, blind, lame, deformed, or in any other way defective in mind, morals, or body.' 'We have thus a population where every ninth marriage is between blood relatives; yet, instead of finding the island peopled with idiots, madmen, cripples, and mutes, not one such person is said to exist in it.'[2]

the percentage of disease on the non-consanguineous marriages would be greater (see *Memoir read before the Anthropological Society of London*, 1866, ii. 444, 445).

[1] Mitchell, *Memoir read before the Anthropological Society of London*, 1866, ii. 442.

[2] *Ibid.* p. 434. His informant was Mr. J. Macdonald, land steward at Berneray, a resident, and intimately acquainted with every family, who was him-

The rugged island of St. Kilda, barely six square miles in area, and 40 to 80 miles distant from the nearest land, affords a remarkable instance of a small community which has been practically isolated for two hundred years at least. In 1697 the inhabitants numbered 180, distributed among 27 families; but twenty-seven years afterwards a distemper, supposed to have been small-pox, killed nearly the whole population, so that in 1758 there were only 88 people, and this number has since fluctuated from a minimum of 87 to a maximum of 108 between that date and the date of the first census in 1851. In the latter year there were 110 inhabitants, distributed among 32 families. In 1861 there were 78 persons in 20 families, owing to the emigration of 36 of the inhabitants in 1856. In 1871 there were 71 inhabitants, composing 19 families, eight persons having lost their lives by drowning since the last census. But though there were from 19 to 32 *families* the following table will show the real relationship of the people:—

Surnames	1841		1851		1861		1871	
	Families	Persons	Families	Persons	Families	Persons	Families	Persons
Gillies	5	25		33	7	33	7	27
McDonald . .	7	26		23	5	18	4	16
Ferguson . . .	4	11		13	2	9	3	10
McKinnon . .	3	9		9	2	10	2	8
McQueen . . .	4	16		20	1	4	2	8
McCrimmon . .	2	4		9	2	3		
McLeod . . .	2	3		1				
Morison . . .	1	2		2				
McKenzie . . .	1	9						
Total	29	105	32	110	19	77	18	69

There were in addition, in 1861, a Mr. Kennedy, catechist and registrar, who was not a native, but did not marry. In 1871 a Mr. McKay appears in his place, also unmarried, but living with

self astonished at the paucity of consanguineous marriages. 'Were I not certain of it,' he says, 'as I am now, by a minute search, I would doubt the fact, from the island being inhabited by the present race from time immemorial' (*ibid.*). If this is the case, the above facts are much more important, for in a population of barely 427, marriages between near kin must undoubtedly be very frequent, even excluding those between first and second-cousins.

an unmarried sister. These people are omitted, as they did not influence the population. The Macdonalds, however, twice married strangers; once before 1861, and once before 1871. It is evident therefore that the whole population are very closely related.[1] In 1860 Dr. Mitchell obtained the following particulars from the Mr. Kennedy, mentioned above. There were 14 married couples on the island, but none of these were actually marriages between full first-cousins. One was a marriage with a woman from Lochinver, and 5 were marriages between second-cousins. These 14 couples produced 125 children, or an average of nearly 9 children per marriage, while in Iceland, where the conditions of life most nearly resemble those of St. Kilda, the average is 6·8, as we shall see below; in Denmark it is 5, and in Scotland 4·64. Of these 125 children 84, or 67·2 per cent., died chiefly from *trismus nascentium* within the first fortnight. The marriage with the woman from Lochinver produced 14 of these children, of which 12, or 85·7 per cent., died within the first fortnight. Two of the other marriages also produced 14 children apiece. Of the 17 surviving children out of the 125 not one was insane or imbecile, blind, deaf, crippled, or deformed, or in any way defective in body or in mind. In the whole population the only defective person (otherwise than from accidents incidental to their perilous pursuits) was an old woman aged fifty, of weak mind.[2] All observers are agreed that the people generally are good-looking and sharp and cautious, as other Scotchmen are reputed to be.[3]

Here, therefore, we have a community which is undoubtedly very closely interrelated, and which has hardly received any new blood for centuries. They are rarely visited, and have almost as little opportunity to change their ideas as they have to change their blood. Yet there is no record of a deaf-mute ever having existed in the island, and the community only differs from other less isolated communities in their astonishing immunity from disease and equally astonishing infantile

[1] Seton, *St. Kilda*, 1878, pp. 143, 147, 157, 158.

[2] Mitchell, *Mem. read before the Anthropological Society of London*, 1866, ii. 245 429.

[3] *Ibid.* p. 427; and Seton, *St. Kilda*, pp. 89 92.

mortality. But that this mortality is not due to the consanguinity of the parents is obvious from the fact that the one marriage with a stranger showed quite as bad results as any of the others, and that children brought from the mainland are as subject to this disease as the others.[1] *Trismus nascentium* is besides undoubtedly caused by the irritation to the umbilical wound caused by foul air, for in the Dublin Hospital, where the infant mortality used to be 17 per cent., of which 19 in 20 deaths were due to trismus, the mortality was reduced to 5 or 6 per cent. simply by moderate ventilation. Until lately the houses of St Kilda, though apparently much the same as those on the mainland, differed from them in some very important particulars. On the mainland the walls are composed of rough stones, piled together and stopped with turf; but on St. Kilda the walls were double and the space between was filled with tightly pressed sod, which practically made them air-tight. The thatch roofs, instead of having projecting eaves which would catch the wind, sprung from the inside of the wall, and hence the walls were always damp. In the outer of the two rooms into which the huts were divided, and through which was the only inlet for fresh air, and only outlet for smoke, were housed all the livestock belonging to the family. In the inner apartments was spread a layer of peat, which served in the double capacity of an absorbent of all the liquid and solid refuse of the house; and afterwards, when by constant additions of peat and refuse it had risen as high as the walls, so that the only space left was in the roof, it was removed and served then as manure. Since 1863, however, these horrible abodes have been replaced by hewn stone huts with zinc roofs and fireplaces with chimneys, and the inhabitants are therefore better housed than the people on the mainland. Little, if any, diminution in the mortality has shown itself however;[2] and we are hence driven to suspect some other cause which might produce this fatal tetanus in new-born infants. Rear-Admiral Otter considers the chief cause to be the very oily diet of the natives, who live chiefly on sea-birds; for a mother fed on cocoa, meat,

[1] Corfield, letter to the *Times*, August 28, 1871.
[2] Seton, *St. Kilda*, pp. 108-112, 219-266.

and biscuit was able to rear her child successfully.[1] This inference is countenanced by the fact that the mortality among Kalmuck children is found to be greatest in the eastern districts, where there are few pastures, and the chief food is fish ; while it is least in the western districts, which contain large cattle pastures.[2] Here the factor consanguinity, as we have seen,[3] is absent, and therefore we have no right to say the similar mortality in St. Kilda is due to the consanguinity of the parents. Miss McLeod found on one occasion port wine and cow's milk being administered to a child one day old ![4] Children who happen to survive grow up strong and healthy ; nor do I find among the causes of death one case of any disease, saving *trismus*, that has ever been supposed by anyone to be originated by consanguinity of the parents—which is saying a great deal.[5]

During the years 1750 to 1846 the population of Iceland ranged between a minimum of 38,142, in the year 1786, and a maximum of 58,619 in 1845. So scanty a population as this, in a country like Iceland, cannot fail to contract very many consanguineous marriages ; for it is practically shut out from all communication with the rest of the world ; it is almost roadless, and travelling is so dangerous that many persons are annually drowned in the attempt to cross those torrents which constantly intersect their lonely path ; while the villages are small and far apart, to the end that sufficient pasture may be found for their flocks and herds.[6] Were we to believe all that has been said as to the evil of these marriages, we must expect to find a dwindling population, dwarfed, and bowed down with phthisis, twisted with rickets, loathsome with swollen glands and unhealed sores, unable to communicate to each other for their deaf-mutism any thoughts that might be spared to them by idiocy and insanity, even were they able to distinguish whether they were speaking to

[1] Letter to the *Times*, August 31, 1871.
[2] *Pall Mall Gazette*, May 29, 1874.
[3] See p. 77 of this work.
[4] Seton, *ut sup.* p. 227.
[5] *Ibid.* pp. 207, 211.
[6] M'Culloch says that only one third of the island, or 10,000 square miles, has vegetation of *any* sort ; while the cattle, estimated at 36,000 to 40,000, their 50,000 to 60,000 ponies, and 500,000 head of sheep, have to live as best they may on grass, moss, and seaweed alone (*Geographical Dictionary*).

a human being or to a post. And certainly they do not live under conditions so healthful that they might hope to escape from these. They eat their food generally cold, often putrid, and always at irregular times. They have no artificial means of warmth, and therefore allow no ventilation in their miserable hovels, which are built of damp earth, and where the whole family remains huddled up, not only at night but the greater part of the day also, during six months in the year, with their cattle, sheep, dogs, and all the livestock they may happen to possess. Indeed, the air in these dwellings becomes so poisonous from the breath of the inmates, their refuse, and the fuel they use, composed of dung, rotten bones, and anything that can be got to burn, that it becomes extremely dangerous to women after parturition and to new-born infants. Nevertheless the population, though subject to great fluctuations in consequence of the great liability to epidemic diseases, is steadily increasing.[1] The number of legitimate births in Iceland is 16·3 per cent. higher than in Denmark for women between the ages of twenty and twenty-five; while the illegitimate births are 22·9 per cent. higher than in Denmark; and while the number of children per marriage in Denmark averages 5, a high average compared with Europe, in Iceland it averages 6·8, and the percentage of still-born is below that of Denmark.[2] The Icelanders average 5ft. 8·5 in. in height, and 156 lbs. in weight,[3] are robust, and very rarely deformed, even in the one district where rickets is known, for this disease generally disappears at the age of five or six.[4] As in St. Kilda, however, the infant mortality is exceedingly great, almost double that in Denmark at the same period of life. The children are nearly always put out to nurse, and are hardly ever suckled, because the women almost destroy the bust by a close-fitting knitted garment they are accustomed to wear, which renders them physically incapable;[5] and hence the children are brought up by hand on

[1] See Thomsen, *Ueber Krankheiten*, etc. *auf Island und den Farör-Inseln*, Table II. and pp. 12–15, 17.
[2] *Ibid.* pp. 147, 148. [3] Beddoe, *Stature and Bulk*, etc. p. 167.
[4] Thomsen, *Ueber Krankheiten*, etc. p. 24.
[5] *Ibid.* pp. 143, 26, 16.

very unsuitable food. The foul air of their houses also frequently poisons the wound on the navel, which suppurates and brings on *trismus nascentium*, the most fatal infant disease perhaps known, and which is often combined with bowel complaints, brought on by their bad food.

Of every 100 deaths		Were caused by
In Denmark 1840–1844	In Iceland 1827–1837	
2·0	—	Hydrocephalus.
1·5	0·6	Whooping-cough.
2·4	—	Scrofulous disease of the glands.
13·7	30·0	Other diseases of childhood, including convulsions, cramp, trismus, etc.[1]

It is curious that rickets is found in only one district, the only part of Iceland where Iceland-spar is found, and this is the only part of the island where scrofula is otherwise than extremely rare.[2] In the year 1845 there were 110 idiots in Iceland, of which 66 were males and 44 females; of insane there were 10 males and 34 females, making a total of 154 mentally deranged, or 0·26 per cent. In Denmark the mentally deranged were 0·31 per cent.; but while here idiocy composed only 57 per cent. of all mental diseases, in Iceland it composed 71·4 per cent.[3] The Icelanders are given to hard drinking; indeed, *delirium tremens* forms 0·08 per cent. of all diseases in Iceland;[4] and when we consider, that drunkenness, illegitimacy, and unskilful midwives are fruitful causes of idiocy, causes which all three are most powerful in Iceland, we can only wonder there is so little idiocy there, not that there is so much. Moreover, it is probable that the disproportion between Iceland and Denmark is not so great, since many persons are returned in Denmark as insane and under the age of ten years who must probably be idiots. The Icelandic insanity is mostly of the gloomy-religious kind,[5] and, as we have seen, taking all kinds of mental derangement together,

[1] Thomsen, *Ueber Krankheiten*, etc. pp. 115, 116.

[2] *Ibid.* pp. 11, 31. Sir Thomas Watson, quoting from Schleisner, on whom Thomsen chiefly relies, says that scrofula is entirely unknown in Iceland (*The Principles and Practice of Physic*, i. 227).

Thomsen, *Ueber Krankheiten*, etc. pp. 112, 113.

[4] *Ibid.* pp. 111, 44.

[5] *Ibid.* p. 113.

there is less in Iceland in proportion to the population than there is in Denmark.

Since the year 1842 all the deaf-mutes in Iceland have been registered. Thomsen picks out the years 1844 and 1846, and says that the number of deaf-mutes at that time was 36.[1] In the year 1845 the population was 58,619, and therefore the deaf-mutes were 6·14 per 10,000 of the population. But of these 36 cases 24 were congenital only, and of 5 no particulars are supplied, which gives the deaf-mutes of congenital origin a proportion of 4·6 per 10,000 of the population, including 3 of the 5 whose origin was unknown.[2] That is, there was 1 case of deaf-mutism, congenital or acquired, in every 1,628·3 of the population; while in Ireland there was, in 1851, 1 deaf mute in every 1,380; in 1861, 1 in every 1,176; in 1871, 1 in every 1,222, and in 1881, 1 in every 1,296,[3] or an average of 1 in every 1,268. In a total population of 1,700 at Asprières, in France, where many consanguineous marriages occurred, there were only 2 deaf-mutes, and these were from non-consanguineous marriages.[4]

Phthisis, says Thomsen, is extremely rare. Indeed it is doubtful whether it occurs at all, since from the close similarity of the symptoms of hydatis and phthisis, and the frequency of the former disease, it is probable that physicians have often been deceived.[5] Dr. Hjaltelin, a distinguished physician of Reykjavik, says that among 30,000 patients who have passed through his hands during a practice of fifteen years, he has never found a case of indigenous consumption or tuberculosis; while Dr. Skaptason, the oldest and most experienced physician in Iceland, says that during thirty-two years of practice, though he has seen a great many diseases of the lungs, he has never once met with a single case of *phthisis tuberculosa*, either in his practice or his autopsies.[6]

[1] His statement is not very clear, for he only says, 'Nach dem Verzeichniss für die Jahre 1844 und 1846, fanden sich damals 36 Taubstumme.' Does this mean the average for the years 1844 to 1846 *inclusive*, or is it the average for only these two years?

[2] *Ibid.* p. 114. Two small districts are omitted in the returns.

[3] *Report on the Status of Disease*, 1871, Table II. p. 7; and *Census* 1881, p. 288.

[4] Devic, *Gazette Méd. de Paris*, March 7, 1863, p. 158.

[5] Thomsen, *Ueber Krankheiten*, etc. pp. 32, 41.

[6] Sir Thomas Watson, *The Principles and Practice of Physic*, i. 227.

In the little island of Westmannoë the infant mortality is even greater than in Iceland. For while in Denmark 189 boys and 160 girls of every 1,000 born do not survive the first year, and in Iceland 326 boys and 281 girls of every 1,000 do not survive the first year, in Westmannoë the death-rate reaches the enormous figure of 762 boys and 722 girls. This mortality is chiefly due to *trismus nascentium*, shown statistically to be mainly due to the horrible state of their dwelling places—worse, if conceivable, even than those of Iceland; at times crowded excessively, and made still worse by the damp and cold of the place.[1] As in Iceland, women are rarely able to suckle their babes, and this is the more unfortunate since they do not keep so many cows as the Icelanders, live more on oily birds, and less on vegetable food. What cows there are have to be partly fed on dried fish. Since the people of Westmannoë have ceased to use filth for fuel, *trismus* has almost disappeared.[2]

Notwithstanding their wretched way of life, which is much the same as that in Iceland, the Faroë Islanders enjoy an average of life, even including the still-born, of forty-four years and two-thirds; while in Denmark it does not amount to more than thirty-six, not including the still-born. Scrofula and tuberculosis are very rare; indeed Sir Thomas Watson says they are entirely exempt from the latter, although their climate, as regards cold and damp, is exactly that which has been thought most likely to produce it. But on the other hand the proportion of those mentally deranged is very great; Panum estimates them at 1 per cent.; and, as in Iceland, their madness assumes a gloomy-religious tendency, which often degenerates into hopeless imbecility, and which Panum ascribes to the melancholy look of the islands, their imposing character, and the generally low pressure of the atmosphere. Congenital idiocy also occurs sometimes, though excessive indulgence in alcoholic liquors is not very common. But Panum believes that of those who do indulge in it a relatively greater number go mad than is the case in other countries.[3]

[1] Thomsen, *Ueber Krankheiten*, etc. pp. 15, 89, 100, 91-96.
[2] *Ibid.* pp. 15, 96, 97.
[3] *Ibid.* pp. 160, 156, 157, 158; Sir Thomas Watson, *ut sup.* i. 228.

Mr. Thoroddsen gives an account of the inhabitants of Grimsey, a small island situated in the Arctic Ocean, about 22 miles due north of the promontory which divides the Eyjafjord and Skagafjord, in Northern Iceland. These number 88, almost entirely cut off from all communication with other people by Arctic storms and Arctic ice. Once or twice a year, indeed, they do contrive to communicate with the mainland, at great risk, in order that they may barter their stores for the necessaries of life. The health of the people is good, and *trismus nascentium*, which was very common, is no longer seen. Their occupations are the same as in similar islands—bird-catching, egg-collecting, and fishing—occupations which cause great loss of life. They possess a few sheep and two horses, but for the last twenty-four years no cows. Now and again they are visited by a few Icelandic shark fishers, and more rarely by English and French fishermen.[1]

M. Devay gives a deplorable account of an Irish colony now supposed to be settled in Sligo and county Mayo, of people driven out of Armagh and Down in the years 1641 and 1689, and therefore subjected to great hardship. For nearly two centuries they have been, in consequence of always intermarrying among themselves, a diminutive, pot-bellied, crooked-legged, and generally miserable people, who form a race easily distinguishable from the other Irish of the neighbourhood.[2] Dr. Beddoe, in noticing it, declares the passage to be an entire libel on the inhabitants of eastern Sligo, and, though he has never visited Mayo, does not think that any diminution of stature has taken place there. To Connemara, where the people, though small, are well built and well favoured it certainly does not apply; nor to Joyce's and O'Flaherty's country, near Galway, where the people are notoriously tall.[3]

[1] *Nature*, xxx. 317, 318, No. 770, for July 31, 1884.

[2] Devay, *Du Danger*, etc. p. 190, who gives the authority of Quatrefages, but does not point out the place in his works, which, according to M. Godron (*De l'Espèce*, etc. ii. 316) is in his *Moniteur des Cours Publics*, 1857, p. 64. Quatrefages probably took it from Prichard, who, in his turn, took it from the *Dublin University Magazine*, No. 48, p. 658. See Waitz, *Anthropologie*, i. 63.

[3] Beddoe, *Stature and Bulk*, etc. p. 190.

Again, the 'Pall Mall Gazette,' in a biography of the late Mr. Augustus Smith, for a long time owner of the Scilly Islands, says that he removed some of the inhabitants of the outlying islets to better neighbourhoods: 'On some of these the scanty resident householders—never forming connexions out of their own island—had, it is said, degenerated into a condition approaching that of imbecility.'[1] Yet Dr. Beddoe remarks on these same islanders: Their 'proportions certainly give the lie to the current notion that men and quadrupeds must degenerate in small islands,'[2] and M'Culloch calls them a healthy people.[3]

The people of the province of Darlicarlia, Sweden, number some 200,000. 'I know of no peasantry in Europe,' says M. du Chaillu, 'who present a prouder bearing or possess a more independent spirit.' They 'are the handsomest of the peninsular population of Scandinavia'; yet, not only do they intermarry among themselves, but rarely marry out of their own parish. Their families are large.[4]

In France, also, there are many communities which do not intermarry with their neighbours. The commune of Batz, near Le Croisic, says M. Voisin, is situated on a peninsula, bounded on one side by precipitous rocks, bathed by the sea, and shut off from the mainland by a salt marsh. The inhabitants number 3,300, and have but a very limited intercourse with the rest of their department (Loire-Inférieure). They seem to be a very simple race, are intelligent, but reserved to strangers. Drunkenness, prostitution, concubinage, and crime are unknown; nor was there a single individual afflicted with any malformation or suffering from any disease of the mind, or from deaf-mutism, albinoism, blindness, or *retinitis pigmentosa*, though they have been in the habit of closely intermarrying among themselves from time immemorial. At the time of M. Voisin's visit he found 46 consanguineous marriages, of which 5 were between first-cousins, 31 between second-cousins, and 10 between cousins of the

[1] August 5, 1872.
[2] Beddoe, *Stature and Bulk*, etc. p. 163.
[3] M'Culloch, *Geographical Dictionary*.
[4] Du Chaillu, *Sweden*, ii. 216, 217, 248. London, 1882.

fourth degree. The 5 marriages between first-cousins produced 23 children, an average of 4·6 per marriage, while the average for all France according to M. Husson, is only 3.[1] All these children were healthy, but two died from acute diseases. The 31 marriages between second-cousins produced 120 children, or 3·87 per marriage, none of whom were affected by any congenital malformation or infirmity, but 24 of them died of acute diseases. The 10 remaining marriages produced 29 children, all healthy, but 3 of whom died of acute diseases. Of the whole 46 marriages only 2 proved barren, or 4·3 per cent.; while the average of barrenness is 11·7, or 15 per cent.[2] The average number of children for all the marriages was 3·7 per marriage.[3]

M. Broca's results obtained in Bretagne, says Dr. Beddoe, seem at first sight to show that in-and-in breeding has a tendency to cause the race to dwindle in size and in numbers. The Bretons, for instance, of the central cantons, where little admixture of blood has taken place, are far smaller men than their compatriots in general. But the greater elevation of stature in some islands, such as that of Ushant, and Cape Clear Isle, and the evidence of other secluded districts where the population, while far from being purely Armorican, has not recently been crossed, points to the essential character of the race rather than its freedom from admixture as the cause of the remarkably low stature, and such indeed is the opinion of M. Broca himself.[4]

There exists between St. Armand and Bourges a colony of Scottish origin derived from the Scottish guard of Charles VII. established at St. Martin d'Auxigny in 1422, to whom the king granted special privileges, which were respected up to the time of the Revolution. They live on the sale of the produce of their orchards. The Foréatines, as they are called, now number some 3,000, all descended from marriages between

[1] Duncan, *Fecundity*, etc. p. 110.

[2] *Medical Times and Gazette*, July 20, 1867, p. 76. See also below, p. 192.

[3] Voisin, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 1865, 433-459. This account is confirmed by Dr. Revillout (see Art. No. 6818, xxxvi. 53 of the *Journal de Méd. et de Chir. Prat.* 2nd series, note). The full particulars of these cases are given in the Appendix to this work; see cases Nos. 254 299.

[4] Beddoe, *Stature and Bulk*, etc. pp. 170 and 163, note.

near kin, for they always marry among themselves, still retain their Scotch names Gallicised, are tall, strong, industrious, and honest, and form one of the handsomest races in France.[1]

Pauillac (Gironde), says Dr. Ferrier, contains 1,700 inhabitants, most of them robust, vigorous, and well-made sailors ; while the women are renowned for their beauty and the clearness of their complexion. Yet, he continues, there is perhaps no other part of France where consanguineous marriage is more common, nor is there any other where exemptions from military service, on account of physical defect, is more rare. It is much the same at Granville, where the maritime population is quite distinct and isolated. At Arromanches, a little village containing less than 100 fishermen, and Portel, a village near Boulogne, containing a population of 3,800, composed almost wholly of five families, the maritime population always marry among themselves, and never among the agricultural population, whom they disdainfully call 'shepherds'; yet they are healthy and robust.[2]

M. Gubler also bears witness to the great beauty of the inhabitants of Gaust, in the valley of Assau, Pyrenees. The custom of marrying in their own commune, though it barely numbers 200 people, is so well established that should any young man wish to marry out of it, he is obliged to ask permission from the village elders.[3] The Bas-Bretons and Basques, who live at the foot of the Pyrenees, are handsome, hardy, and fertile ; yet they never intermarry with other races ; the Basques always marry Basques, and the Bas-Bretons always Bas-Bretons.[4]

The people of the nominal republic of Andorra, a land comprising some of the wildest and most picturesque valleys on the south side of the Pyrenees, number some 7,000 or

[1] Revillout, extract from the *Gazette des Hôpitaux*, in the *Journal de Méd. et de Chir. Prat.* 1865, xxxvi. 53, note, 2nd series. And the *Times* for April 2, 1878, p. 10.

[2] Dally, *Recherches sur les Mar. Cons.* etc. Paris, 1864, p. 54 ; and Lagneau, *Bullet. de la Soc. d'Anthrop. de Paris*, 1866, i. 635.

[3] Dally, *ibid.* p. 55.

[4] Châteauneuf, in the *Ann. d'Hygiène*, xxxv. 43, 44.

8,000 inhabitants, who are divided into six communes. They live as their fathers lived before them; the eldest of each family is its chief, and every man chooses a wife from a family of equal consideration with his own, particular care being taken that no one marries below his rank, and very little attention being paid to fortune. No one leaves the paternal roof till he marries, nor may anyone till married have a share in the public affairs. When there are only daughters in the family the eldest becomes heiress and marries the youngest son of another house, who adopts the name and family of his wife. By this arrangement the principal families have remained for centuries unchanged. They are a strong and well-proportioned race, and mental disease and vice are almost unknown.[1]

M. Devay gives an instance of a little village near St. André and Rives, in the department of Isère, called Izeaux, very isolated, and situated on poor and barren soil. The inhabitants, he says, necessarily intermarry among themselves, and frequently in their own family. Towards the end of the last century all of them, men and women, had an extra finger on each hand, and an extra toe upon each foot, but about the year 1860 these extra digits had disappeared through crossing.[2] This very terrible accusation against consanguineous marriage I shall have occasion to return to, and therefore shall say no more about it here.

The Cagots, Capots, Gahets, Cassati, or Chrestiaa formed a widely distributed race in France from the time of Charlemagne to the beginning of this century, when the last vestiges of them were finally absorbed. Their origin is doubtful, but from the researches of M. Michel it is most probable that they were Spanish and Goth refugees from the vengeance of the Saracens, after Charlemagne's unsuccessful incursion into Spain.[3] This much is certain, however, that they were looked upon with no friendly eye by the inhabitants near whom land was granted them: whether

[1] M'Culloch, *Geographical Dictionary*.
[2] Devay, *Du Danger*, etc. pp. 95 97.
[3] Michel, *Hist. des Races Maudites*, i. p. 293 *et seq.*

because of the jealousy to foreigners inherent in every ignorant people, to the favour shown them by the Carlovingian dynasty, or to a taint of the Arian heresy,[1] they were treated in a way that would speedily have caused them to emigrate to a more hospitable country had there been the chance of such a country's existence. As it was they fell gradually lower and lower. They were not strong enough, distributed as they were in small detachments, to hold their own against a hostile population. They were gradually forbidden to carry arms, to carry on any of the nobler professions, to move beyond certain bounds, or to mix at all with their neighbours. These disabilities again brought on greater. The people forgot the origin of the Cagots, if they ever knew it, but remembered their hatred. They were tainted with heresy, and the mob in consequence fancied that they were tainted with diseases sufficient to account for the regulations which forbade all intercourse with them. It might be that they were confused with the lepers, who were also an outcast lot, or it might be, as Michel thinks, that their original name of *Gavacho*, taken from *Gabali*, or mountaineers, a word which, by what Michel calls a philological accident, had also formed the term *Gafo*, first used in the sense of dirty or stinking, and then for leper,[2] caused them after a time to be looked upon as really tainted with leprosy, and thus they were supposed to stink, and to infect everything they touched. For this reason they were obliged to wear a distinctive mark, a piece of red stuff, since yellow was already appropriated by the unfortunate Jews; they were not allowed to mix in the village sports, to be laid in the village churchyard, or even to mix with the rest of the faithful in the village church—nay to such extremes was this repugnance carried that they had a separate door, a separate holy-water dish, and the priest handed them the consecrated wafer at the end of a stick.[3]

As may be imagined, it was rarely indeed that they intermarried with their neighbours. Mixed unions of this kind did occasionally take place; but, as a rule, a man would

[1] Michel, *Hist. des Races Maudites*, vol. i. pp. 302, 305, 311.
[2] *Ibid.* i. 345-350. [3] *Ibid.* i. 9, 11, 74, 103, 182, 183.

rather see his daughter turned on the streets than married to one of the hated Cagots; nor would popular prejudice leave even the offspring of these mixed marriages in peace, but taunted them for generations with their Cagot blood.[1] The marriages which they contracted among themselves must have been very close indeed, since bounds were generally set to the peregrinations of every Cagot community; and they were forbidden ever to enter a hostelry, for fear lest they might infect the place.[2] Under these circumstances we are indeed surprised to find that the Cagots, far from being cast down, as almost any people would have been, by the general hate of what to them was the world, nobly struggled for their freedom. Kings and parliaments were importuned again and again in vain. Though justice was often nominally granted them, it was never carried into practice; and at last when tired out with these misfortunes and cruelties they attempted to compel respect, they were soon disarmed, and forbidden ever again to carry anything more formidable than a pointless stick.[3] Their wretched habitations outside the walls of cities, their oppression, and the manifold disabilities under which they laboured seem only to have had the effect of making them more industrious, and not less healthy than their neighbours.[4] De Buziet describes them as indistinguishable from the other people, except that some families had a fair and fresh complexion, and were tall and lithe; while others again were dark and strong, of middle height, and well-knitted frames; and Làa, Minvielle, and Zamacola, who, like De Buziet, had exceptional means of observation, confirm this description.[5] It was a popular idea that they had very small or no ear-lobes; which may be true of some of them,[6] or it may be that those people who had small ear-lobes were believed to be Cagots. Of course if any family should produce a 'sport' of this kind, or of any other

[1] Michel, *Hist. des Races Maudites*, i. 7, 17, 21, 27, 44, 221, 227, 3, 4.
[2] *Ibid.* pp. 165, 166, 181, 183. Compare also p. 170.
[3] *Ibid.* chap. ii.
[4] *Ibid.* pp. 214, 14, 17, 28, 37, 40, 41, 48, 53, 103, 217, 218.
[5] *Ibid.* pp. 266, 267.
[6] *Ibid.* chaps. i. and ii.

such as six fingers, consanguineous marriage must necessarily tend to fix it.[1]

In short, the Cagots are a people who have married continually among themselves for centuries, who have been terribly oppressed for centuries, who have been as healthy as other people despite this ill-treatment, and who have now, through the advance of civilisation, broken through the barriers which opposed their intermarriage with their neighbours, and have been absorbed.[2]

The paper-makers of the Angoumois, Limousin, and Auvergne are a separate race, so much attached to their villages that they never quit them, and consequently never marry except among themselves. Their children are always brought up in their own profession, which from its nature is very unhealthy. Living as they do in a damp and marshy country, their factories full of water, and having to pass twelve or fourteen hours at a time surrounded by vapour in their paper vats, it is not surprising that they seldom attain even the age of sixty-five, and frequently suffer from varix, dropsy of the legs, chronic rheumatism, and ulcers of the leg and ankle joints, from tertian fevers in autumn and spring, and that they suffer greatly from catarrh, their knees bend inwards, and their teeth fall out early in life. They are said also to be subject to scurvy,[3] which would account for their teeth going. It is especially noteworthy, however, that of all these diseases not one is to be found in the list of those said to be caused by the marriage of near kin.

[1] The Chaouia Berbers of the Aures Mountains also have lobeless ears. Waitz, *Anthropologie*, i. 97 ; Godron, *De l'Espèce*, etc. ii. 260.

[2] M. Devay, with his usual disingenuousness, chooses to repeat a mistake of the Middle Ages, which even at that time was hardly excusable, and confound the Cagots with the lepers, crétins, and goitreux. He has read nothing except Michel's work on the subject, yet he chooses to ignore Michel's deductions founded on an intimate and comprehensive knowledge of his subject, and put up instead some chimerical views of a physician who shared in the prejudices of an ignorant age, and who has been contradicted by more enlightened physicians of the same time. I must refer my readers to Devay, *Du Danger des Mariages Consanguins*, p. 186, and to Michel, *Histoire des Races Maudites*, vol. i. chaps. iii. and v. But perhaps the whole of the volume should be read to form an adequate idea on the subject. Compare also Hecker, *Die Grossen Volkskrankheiten des Mittelalters*, pp. 65, 75, 96-100, who in his account of the Black Death shows how ready the mob are to fix on any outcast race as the disseminators of disease.

[3] Michel, *Hist. des Races Maudites*, ii. 30, and note.

The Marans, of Auvergne, a race of Spanish converted Jews, were for their origin left particularly isolated. The Christians of Spain would not intermarry with them, nor would either the Jews or the Moors. It is probable that they were expelled with the Moors from Spain by Philip III., and that they then settled in France. They have been accused of having introduced syphilis into France, an accusation of doubtful truth, since they have always intermarried among themselves, and were generally hated as strangers. No other accusation of ill-health seems to have been made against them.[1]

The Hautponnais and Lyzelards, of St. Omer, form populations absolutely distinct from their neighbours, and which have preserved themselves without a cross from any other race, since their first establishment about A.D. 449. Some say they were Saracens, others say Saxons, others Moors, Flemings, or the descendants of German lanzknechts. They have a separate language, a sort of Flemish patois, and have always lived at peace with the city, and fought with the other community.[2] No accusation of ill-health has been brought against them as far as I am aware, and they certainly have not 'died out.'

There are various communities scattered over Sermoyer, Arbigny, Boz, and Ozan, communes of the department of Ain, and the arrondissement of Bourg-en-Bresse, Canton Pont-de-Vaux. An immemorial tradition ascribes their origin to the Saracens, but Reinaud has shown that this is impossible. Whatever may be the origin of their isolated state and the hatred shown them by their neighbours, it still exists according to the curé of Boz. They cannot get even the commonest girl in marriage, and hence always intermarry among themselves. Yet what a difference is there, says the curé, between these Burins, industrious and rich, whose active labour makes the earth put forth her riches in abundance, and their neighbours who hold them in contempt, yet often rest in idleness and poverty! The Burins have been labourers, cattle-

[1] Michel, *Hist. des Races Maudites*, ii. 52–54, 94–96.
[2] *Ibid.* p. 102–104.

breeders, and butchers for centuries. Some among them are remarkably fine men, the women pretty, with quick black eyes, fair, and rather inclined to roundness. They have a strange air, which the curé ascribes to their isolation. The Sermoyers, like the people of Boz and Uchizy, are hated by their neighbours, and pass for an avaricious and bad people. They have had great disputes concerning the pastures of the Saône, and many have been killed on either side. Now they fight in the law courts; but these quarrels, adds the curé, do not prevent them being a very sensible lot of people.[1]

Another isolated community are the Vaquéros, who, notwithstanding their isolation, have probably the same origin as the rest of the Asturians. Their little villages are perched on the Asturian mountains in positions where they are protected by others higher still. Their sole occupation is the breeding and sale of sheep, and every year they leave their habitations for the higher mountains of Leon, where they remain from the middle of June to the end of September for the sake of the pastures. As merchants, they are sharper than those who occupy themselves with agriculture, and also more dishonest. The consequence is they are hated by the other Asturians; a sentiment which the Vaquéros cordially return, and both avoid as much as possible any intercourse, and especially the ties of relationship. But if, in spite of all this, interest or violent love lead to a mixed marriage, it can never occur without great scandal, and the greatest expression of repugnance from the Asturian family. The Vaquéros pay more money to Rome for dispensations for marriage within the forbidden degrees than all the rest of the principality together. They are all plebeians alike, with the exception of one family, a very extended one now, since it has married among the others for more than half a century.[2]

The Chuetas, of Majorca, were another isolated community of Jewish converts, who never intermarried with their neighbours. Of course they were treated brutally both by the people and by the Inquisition, which tribunal sentenced them

[1] Michel, *Hist. des Races Maudites*, ii. 108-110.
[2] *Ibid.* ii. 42, 43.

to be burnt in hecatombs on suspicion of a relapse to the faith of their fathers. Notwithstanding this treatment, so far from dying out, there were in the year 1782 more than 300 families left, who were still generally hated for their origin, and still forced to intermarry among themselves.[1]

At Potés, a little town in the province of Santandar, Spain, the inhabitants were quite shut off from all the rest of the world until about thirty years ago. According to Mr. Rose, they had at that time become quite a race of dwarfs from their 'ever-recurring intermarriages.' Then the mines brought a number of Gallician labourers, who soon reformed matters, for 'the population has increased in strength, stature, education, intellect, and morality.'[2] So we see that consanguineous marriage is apt to ruin the education and morality of a people as well as their physical powers. I will add that Mr. Rose never saw them at their pre-reformation period.

The upper classes of the Azore Islanders, owing to the general desire to hoard wealth, are in the habit of intermarrying very closely among themselves, so that marriages even in the third degree are very frequent. They are very ignorant, and contented with their ignorance; the strain of Moorish blood in their veins tinges their habits and customs, and they are mean and parsimonious in their way of life. Consul the Hon. E. Monson finds an unnatural frequency of idiocy and enfeebled constitution among them, which he considers a consequence of their consanguineous marriages.[3] M'Culloch, however, points out that they are also morally debased by a corrupt clergy,[4] and this of course is likely to lead also to physical debasement.

The descendants of the original French settlers on the island of Réunion, known as Petits-Créoles, or Petits-Blancs are described by Dr. Yvan, who visited them in the year 1844, as the aristocracy of the island. These families, he says, have acquired, under the influence of the most salubrious climate in the world, a remarkable degree of beauty. The men are straight

[1] Michel, *Hist. des Races Maudites*, ii. 38–41.
[2] Rose, *The Spanish People*, i. 299. London, 1877.
[3] *Consular Reports*, 1871, No. 4.
[4] *Geographical Dictionary.*

and vigorous, their skin a delicate sunburnt shade, the forehead broad, and their countenances noble and dignified. The women are also well-formed and beautiful, with chestnut hair, long eyelashes, and large brown eyes, regular features, and if anything too proud and energetic an expression of countenance. The manners of these people are simple and peaceful; the families live in the closest intercommunion; they commit few offences, and crime is almost unknown among them. It is worthy of remark, adds Dr. Yvan, that in spite of their poverty these people will never marry a half-breed—nothing would induce them to defile the purity of their race by one drop of mixed blood.[1]

In a tribe of hippopotamus-hunters settled on the little island of Nyamotobsi, on the river Zambesi, called Akombwi, or Mapodzo, the men rarely, and the women never, intermarry with other tribes. 'They are rather a comely-looking race, with very black smooth skins,' says Livingstone;[2] and elsewhere he says[3] they are 'certainly a magnificent race of men, hardy and active in their habits, and well fed as the result of their brave exploits; every muscle is well developed, and, though not so tall as some tribes, their figures are compact and finely proportioned.'

Bruce relates that the Wito, who inhabit a small island on lake Tzana, near Gonda, live quite apart from the neighbouring Abyssinians, have a different religion, speak a different language, and subsist by hippopotamus-hunting. The Abyssinians told him they were ugly and dirty, and they considered the touch of a Wito defiled them.[4] Mr. de Cosson, however, who saw them, says that some of the Wito are very beautiful, and he actually occupies two pages in the description of one Wito girl.[5]

We know from the accounts of the early travellers, that the New Zealanders were a vigorous and fertile race before the advent of the white man, and we know from history that the latter has ever sought to treat his brown brother with paternal

[1] J. A. N. Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 191, 192.
[2] Livingstone, *Zambesi*, pp. 38, 39.
[3] Livingstone, *Last Journals*, 1874, ii. 207.
[4] Bruce, *Travels*, Edinburgh, 1790, iii. 402, 403.
[5] E. A. de Cosson, *The Cradle of the Blue Nile*, London, 1877, ii. 74, 95-97.

kindness. In good sooth, though he has taken most of the land, and killed great numbers of the people, he has not introduced those contagious diseases into New Zealand which have killed off whole populations in other places, because in that country the acute contagious diseases seem to have no hold upon the aborigines, and are easily thrown off. He has, by the help of missionaries, clothed and Christianised them, and, with the assistance of their own good sense, forbidden, so far as is possible, the introduction of spirituous liquors. They no longer marry any nearer relations than first-cousins, nor slay each other, nor slay their female infants ; and yet this greatly improved population is dying out with alarming rapidity. A census taken in 1859 shows that the native population at that period consisted of 56,049 persons only. Between the years 1844 and 1858 the population had diminished by 19·42 per cent. in certain districts at least ; and out of a total of 444 wives, 155 were barren, and 68 more had no living issue. Could anything be more obvious than that this diminution, due on the one side to lessened fecundity, and on the other to great infant mortality, must be caused by consanguineous marriage ? But the only evidence we have on this point is thirteen marriages taken indiscriminately from the village of Tihorewaru :—

Number of Marriages	Between	Number of Children Living	Number of Children Dead	Average Number of living Children per Marriage	Average Number of dead Children per Marriage	Average Number born per Marriage
5	No relations. .	18	20	3·6	4·00	7·6
3	Distant relations .	6	8	2·0	2·70	4·7
1	First-cousins once removed . .	1	6	1·0	6·00	7·0
4	First-cousins .	11	9	2·8	2·25	5·0

To which I have added the averages, by which it will be seen that, so far as such microscopic statistics can show anything, no trace is discoverable of any effect of consanguineous marriage. On the other hand, a great change has been made in the mode of life of the natives. They used to go about most scantily clothed, while now they cover themselves with blankets, which are thrown aside as soon as they become

hot. They are confined in comparatively small districts by the encroachments of white settlers, and consequently the physical, mental, and moral circumstances to which they had adapted themselves by gradual evolution for centuries have been suddenly changed. But perhaps the main cause is their change of diet. They used to live upon fern and convolvulus root, but now they live upon corn and potatoes, and since 1830, when the great decrease was first noticed, they took to living on putrid corn. This remarkable habit seems to have originated in the difficulty or trouble of grinding the corn. The natives steep their maize in a running stream for about two months until it is rotten, and then not only eat it themselves, but give it to their young children. The consequence is that they have no stamina, and the slightest disease carries them off, while the children die as a matter of course. The missionaries are making earnest endeavours to give them facilities for grinding corn, so that in some districts the population is now again increasing; but it will be long before they recover from the fatal gift of clothing or before they understand that to go to sleep in a wet blanket is not conducive to health.[1]

In the year 1598 Shimadzu Yoshiro, the feudal lord of Satsuma, brought over six potters with their families from Corea. In 1603 they had increased, and the larger number of them, consisting of seventeen families, were settled at Nahashirogaha. From the beginning they never intermarried with the Japanese, except in a very few cases, and have no objection to marrying persons of the same family name as themselves, contrary to the present law in Japan. They retain their customs and language, and until quite lately also retained their Corean dress.[2]

There is some doubt whether the old Samaritans were a half-bred race, or whether they were a pure race, removed to Samaria by Esarhaddon in place of the captives of Shalma-

[1] Fenton, 'Observations on the State of the Aboriginal Maori Inhabitants of New Zealand,' in the *Journal of the Statistical Society of London*, December 1860, xxiii. 508–541.

[2] E. Satow, 'The Korean Potters in Satsuma,' in the *Transactions of the Asiatic Society of Japan*, 1878, vi. part ii. 193–202.

neser. If they were a pure race they were probably an Assyrian colony, on whose fidelity the king was able to rely. If a mixed race they may have been remnants of the ten tribes, or a fusion of these, Phœnicians and Syrians, or a colony from a great distance placed there by the Assyrians. But whatever their origin, they were, by the force of circumstances, a peculiarly isolated race. Like the Chosen People, they spurned all connection with the neighbouring races, and were spurned in their turn by the Jews themselves. Stung by this contempt —a contempt which naturally followed from the exclusive ideas and laws which clung to the Jews even in their bondage —the Samaritans arrogated to themselves that title which the Jews refused to share with them, and thenceforward a hate burned between them, only possible between neighbouring nations holding different and bigoted religious views. They were exclusive then, they are an exclusive family now. Though they had been slaughtered in thousands by Alexander, by Pilate, and by Vespasian, Epiphanius in the fourth century considered that the Christians had more to fear from the Samaritans than from all their other adversaries. In the fifth century they justified this prediction by an outrage on the Christian population, which was so severely punished that they sank into an obscurity scarcely broken until the sixteenth century.[1]

In 1855 there were sixty-five men and boys, and about 130 women and girls.[2] In 1872 they were reduced by constant ill-treatment and persecution to 135, of whom eighty were males. About the same time Jacob-esh-Shallaby was excommunicated and retired with his family, thus reducing the total to 130. Lieutenant Conder, like all previous observers, extols their beauty and physique highly. 'The beauty of their priestly family,' he says, 'is remarkable; the aquiline nose, the lustrous brown eyes, the thick under lip, the crisp hair, the peach-like down of the complexion, are pre-eminently Jewish.'[3] In 1881 he again observes: 'The Samaritans appear

[1] Smith, *Dictionary of the Bible*, art. 'Samaria.'
[2] Rogers, *Notices of the Samaritans*, etc. p. 51. London, 1855.
[3] Conder, *Tent Work in Palestine*, 1878, i. 35, 36, 54.

to be prospering, as their numbers have increased from 135 to 160 souls; and I was much impressed with the fine physique and handsome countenances of the men, which seem to contradict the idea that the race is dying out, as does also the fact that the number of males is considerably in excess of that of the females: 98 to 62.'[1]

The Jews, before all others, are the chosen people against whom the attacks of Parasyngeniasts have been directed, yet M. Boudin, the most pertinacious champion of this class, has himself written a remarkable eulogy on the strength, viability, and wonderful endurance of this much-maligned nation. There are some races, he says, who seem marvellously able to adapt themselves to variations of climate, while there are others who can scarcely support the least change. The Jews, and perhaps the Gypsies, are instances of the former, for the Jews are now spread over every quarter of the world; they are scattered in Europe, from Norway to Gibraltar; in Africa, from Algeria to the Cape of Good Hope; in Asia, from Cochin China to the Caucasus, and from Jaffa to Pekin; while in America they are to be met with everywhere, from Monte Video to Quebec. Only fifty years ago they invaded Australia, and have already given proof of their ability to flourish and multiply in its equatorial region under a climate which other people of European origin have never yet been able to withstand. Though they are not generally found at any great elevation above the level of the sea, possibly because such places are rarely suited to their usual occupations, there is yet no reason to suppose that they are at all unsuited to such places; while on the other hand they have lived for centuries, and still continue to live, at the only spot of the globe situated 400 mètres below the level of the sea, a part where it is very doubtful whether any European could live and multiply. Wherever, continues M. Boudin, the Jewish race has hitherto been studied, it has shown itself governed by statistical laws as to births, deaths, and the proportion of the sexes entirely different from

[1] Conder, *Reports to the Palestine Exploration Fund*, 1881. The risk of a wrong proportion of the sexes, owing to the limited numbers of isolated communities, is the great difficulty, as also in the case of breeders of animals.

those which govern the surrounding communities.[1] Nor is this astonishing when we recollect that they always marry among themselves, except under the supposition that marriages between near kin are harmful, for by marriages of this kind every animal is far more easily acclimatised than by continual crosses.

That the Jews are so pure a race as M. Boudin supposes has been contested by M. Renan, M. Loeb, and Dr. Neubauer: but Mr. Jacobs, in an interesting article,[2] shows strong historical reason, on the one hand, for the truth of the general opinion; while on the other he shows that mixed unions are very infertile.[3] Mr. Adler gives the following statistics:—[4]

Where the parents were	Average No. of children per marriage
Both Roman Catholics	5·2
,, Jews	4·4
,, Protestants	4·3
One Protestant and one Roman Catholic	3·2
One Christian, the other Jewish	1·6
One Protestant, the other Jewish	1·3

On 56 cases of mixed marriages collected by Mr. Jacobs 18 per cent. were sterile;[5] while on 62 marriages between cousins only 5·4 per cent. were sterile if we omit three cases of recent marriage.[6] It is highly probable, therefore, that the Jews in every country are an unmixed race, who generally intermarry among themselves and frequently near relatives. If, then, M. Boudin's declared opinions are correct we should expect this stiff-necked generation to have a lesser viability, a greater percentage of still-born, of early mortality, and of other evils, as befits a people who will not submit to laws laid down by pontiffs and sanctioned by emperors, excepting when they applied to themselves. Yet, strangely enough, M. Boudin informs us that the Jewish population has doubled

[1] Cited by Devay, *Du Danger*, etc. p. 180, from Boudin's *Géographie Médicale*.

[2] Jacobs, in the *Journal of the Anthropological Institute*, p. 23 *et seq.* vol. xv. No. 1, for August 1885.

[3] *Ibid.* pp. 27, 28.

[4] Adler, *ibid.* p. 60, for the entire population of Prussia between the years 1875 and 1881.

[5] Jacobs, in the *Journal of the Anthropological Institute*, p. 28.

[6] Jacobs, *Jewish Chronicle*, January 12, 1883, p. 10, No. 720, new series.

in fifty years, while the infant mortality is less among the Jews by more than one-third in some countries, and by one-half in others, than in the Christian populations.[1] In Prussia, says Oesterlen, one-fifth of all children born in wedlock, and including the still-born, die before they reach their fifth year, while only two-thirteenths of the Jewish infants die before reaching that age, including, besides the still-born, also all the children born out of wedlock. How great a difference this really is may be seen by the fact that while the average mortality for almost the whole of Europe was 21·8 per cent. for legitimate, it was 32·5 per cent. for illegitimate children.[2] Neufville shows that in Frankfort, while the average duration of life among the Christian population was 36 years and 11 months, that of the Jewish population was 48 years and 9 months; and yet, in comparison with other towns, the Christian population was long-lived.[3] The two following tables will show this difference more clearly :—

There died between the age of	Out of every Hundred Deaths among the Christians	Out of every Hundred Deaths among the Jews
1 9 years	26·4	13·3
10 19 ,,	4·5	4·5
20—29 ,,	12·4	8·8
30—39 ,,	10·6	9·5
40 - 49 ,,	11·0	9·9
50—59 ,,	10·3	9·9
60 - 69 ,,	11·4	16·7
70—79 ,,	9·7	20·5
80—89 ,,	3·5	6·5
90—100 ,,	0·2	0·4

[1] Dally, *Re herches sur les Mar. Cons.* pp. 47, 48.

[2] Oesterlen, *Med. Stat.* pp. 146, 147. If a great proportion of male births is a sign of vigour in a nation, as appears to be the case from the Scotch Census Report of 1871, the Jews seem pre-eminent. Thus for every 100 girls there were born in—

Country	In the Years	Male Jews	Male Christians
Prussia . .	1820 - 1834	111·0	106·0
,, . .	1849 - 1852	106·9	105·9
Austria . .	1851	121·0	105·9
Algiers . .	1836 - 1851	106·5	103·0

Ibid. p. 164. And Waitz gives the number of male births for every hundred female births among the Jews as 208 in Berlin, and 120 in Leghorn (see his *Anthropologie*, i. 127).

[3] Neufville, *Lebensdauer*, etc. pp. 18, 19.

Of the comparative number living—[1]

Jews per cent.	Christians per cent.			
86·7	73·6	reach their	10th	year.
82·2	69·1	,,	20th	,,
73·4	56·7	,,	30th	,,
63·9	46·1	,,	40th	,,
54·0	35·1	,,	50th	,,
44·1	24·8	,,	60th	,,
27·4	13·4	,,	70th	,,
6·9	3·7	,,	80th	,,
0·4	0·2	,,	90th	,,
0·0	0·04	,,	95th	,,
0·0	0·0	,,	100th	,,

Consanguinity of the parents of course does not affect the mortality one way or the other. The cause of the greater mortality among the Christians may be partially due to the danger from too early exposure for baptism,[2] but this can have but a very slight effect. We must look for the cause of infant mortality in that of the greater viability of the adults. The Jews are an abstemious race, and their professions are chiefly mental, rarely mechanical. Hence they are less subject to the influence of harmful trades, and the good health of the parent cannot but affect the viability of the child. It is for the same reason that the Jewish population seems comparatively more prone to mental derangement. There were, in the year 1847 in Denmark, 5·85 per 1,000 Jews suffering from some form of mental disease, while there were only 3·34 per 1,000 Catholics thus affected ;[3] and M. Legoyt gives the following table, showing the relative frequency of mental disease among Catholics, Protestants, and Jews :—[4]

	Number for one Insane of		
	Catholics	Protestants	Jews
In Bavaria . . .	908	967	514
,, Hanover . . .	528	641	337
,, Silesia	1355	1264	644
,, Würtemburg . .	2006	2028	1544
Total	4797	4900	3039

[1] Neufville, *Lebensdauer*, etc. pp. 111, 113.
[2] Oesterlen, *Med. Stat.* p. 148, note 3 ; and p. 309, note 3.
[3] Boudin, *Ann. d'Hygiène*, xviii. 2nd series, p. 15.
[4] Legoyt, *Journal de la Soc. de Stat. de Paris*, 1863.

Hence there were four insane in every 4,797 of the Catholic population ; four in every 4,900 of the Protestant population ; and four in every 3,039 of the Jewish population. 'Must we see in this frequency of lunacy among the Jews,' says M. Legoyt, 'an influence of race, or merely a consequence of the fact that they inhabit those towns, and exercise those professions, the most exposed to economic crises ? Must we see there, like Dr. Martini, the influence of the fact that marriages between near relatives are commoner among the Jews than among the Christians ? Or ought we to admit the concurrence of all three causes ?'[1] MM. Boudin and Chipault consider it solely due to the last cause, and even fancy they can detect a direct relationship between the frequency of insanity and the closeness of the degrees within which marriage is permitted by the Jews, the Protestants, and the Catholics.[2] How such a deduction is supported by the table given above I am at a loss to see. In the first place, the Catholics, who are supposed not to contract marriages with first-cousins, appear to be more subject to insanity than the Protestants, who do. In the second, we must consider what are the proportions between the three religions in which consanguineous marriages are practised. In some parts the Catholics do contract more consanguineous marriages than do the Protestants ; thus Dr. Stieda gives the following from Alsace-Lorraine :[3] 0·186 per cent. of marriages between Protestants were within the degree of first-cousins, 0·997 per cent. among the Catholics, and 2·302 among the Jews. I think that this, like all the French statistics on consanguineous marriage, is very much too low ;[4] accepting these figures, however, as the proportion, we should find more insanity among the Catholics than the Protestants, if consanguinity produces insanity, and if the relative proportions in Alsace-Lorraine are the same as elsewhere. In the third place, how can we say that the greater proportion of insanity among the Jews is

[1] Legoyt, *Journal de la Soc. de Stat. de Paris*, 1863, pp. 90, 91.
[2] Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 526 ; Chipault, *Études*, etc. p. 74.
[3] Stieda, *Annal. de Démogr. Int.* iii. 35.
[4] See chap. v. of this work.

not due to their professions when we do not know the relative number of Jews and Christians who live in towns, and the relative number who live in the country? How important, nay, how absolutely necessary, it is to know this before any deduction can be made is shown by the difference of about 25 per cent. between madness in the country and madness in towns.[1] Hence, to make the table really useful, it would be necessary not only to compare the proportion of insane of each faith, but also the proportion who lead a town life; and, further, the proportion who are engaged in professions which tend to cause constant anxiety. It is well known that a far greater proportion of Jews than of Christians are occupied in professions which may be classed as mental, and not mechanical, such as teachers, professors, merchants, and speculators in money, etc.; and it is also well known that just these professions give the highest percentage of lunacy; indeed, it is nearly certain that it is these professions which make madness so much more frequent in towns than in the country. There can be very little doubt but that it is this which brings up the proportion of lunacy among the Jews; a theory which is confirmed by the character of that madness—generally an acute or raving mania, and seldom hypochondriacal or despondent.[2] But, according to M. Legoyt,[3] idiocy also is commoner among the Jews. Thus there were in—

	Number for one Idiot of		
	Catholics	Protestants	Jews
Silesia (1856) . . .	4,113	3,207	3,003
Wurtemburg . . .	580	458	425

and this is not so easily explained as the former. The Jews are not drunkards, and hence we should expect, if anything, a smaller proportion of idiots among them than among the Christians. It is not certain, however, owing to the smallness

[1] Oesterlen, *Medicin. Statistik*, p. 522. Of every 100,000 inhabitants of Hanover living in towns there were 222 mad; out of the same proportion in the country there were 161.

[2] *Ibid.* p. 522.

[3] Legoyt, *Journal de la Soc. de Stat. de Paris*, 1863, p. 91.

of these numbers, that any deduction is reliable ; and, further, the causes of madness in the parent will doubtless lead to imbecility in the offspring, while, at all events, continued residence in towns must largely influence it. We must therefore await a more elaborate table before we may venture to reason upon it.[1] M. Boudin further asserts that deaf-mutism is more frequent among the Jews than it is among Christians ; that on examination of the records of the Imperial Institution for Deaf-mutes at Paris he found three Jews in a total of 200 congenital cases ; whereas the Jews are, to the rest of the population of France, as 1 to 350.[2] Unfortunately for this theory, however, M. Boudin's premises do not happen to be beyond doubt. The chief instructor at that institution, M. Vaisse, says it has only brought up a very inconsiderable number of Jews ; it has sometimes contained one or two, and sometimes none at all. M. Dally, who examined the records very carefully, utterly denies that M. Boudin's three Jewish cases were either congenital or derived from marriages between near kin.[3] M. Isidore, Grand Rabbi of Paris, estimates the

[1] It is amusing how, in the absence of reliable statistics, attempts to fix upon marriages of consanguinity as the cause of idiocy refute themselves. 'It is remarkable in England,' says Esquirol, talking of mental derangement, '*especially among the Catholics*, who always ally themselves in marriage with those of their own denomination' (*Mental Maladies*, etc. translated by E. K. Hunt, p. 49). It is more frequent in England and Scotland, according to Dr. Stark because the Protestants marry their cousins, than in Catholic Ireland (*Journal of the Statistical Society of London*, xiv. 62). How baseless all these thoughtless off-hand statements are may be seen from subjoined table, compiled from the *Report of the Census Commissioners for* 1871 *on the Status of Disease in Ireland*, and *Census* 1881, for in every one of the diseases here given, and which are supposed to be peculiarly due to consanguineous marriages, the Roman Catholics have a far greater proportion of sick, whatever may be the cause. Thus :—

There were		Census of 1861		Census of 1871		Census of 1881	
		Roman Catholic	Other Religions	Roman Catholic	Other Religions	Roman Catholic	Other Religions
Deaf and dumb	one in every	1,054	938	969	990	988	1,074
Blind	one in every	799	1,040	796	1,111	792	1,096
Lunatics and idiots	one in every	419	385	322	348	269	328
Lame and decrepit	one in every	1,260	2,369	1,602	3,710	not given	

In the year 1861 the deaf and dumb pupils in the Claremount, Moneymore, Strabane, and Ulster Institutions, 'no matter from what source received,' are reckoned as Protestants. The lunatics are also probably wrongly returned for that year.

[2] Boudin, *Ann. d'Hygiène*, xviii. 14, 15.

[3] Dally, *Recherches sur les Mar. Cons.* p. 46.

Jewish population of that town at 25,000, in which number, he says, there were a few weeks before the date at which he writes only 3 Jewish deaf-mutes in Paris ; of which 2 came from Bordeaux and 1 from Rhenish Prussia, while the latter has now left.[1] Counting all three, this gives a proportion of 1 in every 8,334. Now according to official reports, says M. Dally, there is 1 deaf-mute in every 4,694 inhabitants of the department of the Seine : hence, so far from giving a greater percentage of deaf-mutism, the Jews give a considerably lesser.[2]

Mr. Jacobs estimates the number of consanguineous marriages among English Jews at 7·5 per cent., using a method similar to Mr. G. H. Darwin's. He also finds, as Mr. Darwin found,[3] and as I found,[4] that such marriages were more fertile than ordinary marriages ; from which he deduces that 11·2 per cent. of English Jews are the children of first-cousins Dr. Schöntheil, Director of the Deaf and Dumb Home in Walmer Road, informed him that 3 out of the 24 children there were the offspring of first-cousins, or 12·5 per cent., which is much nearer the estimate than could be expected with such small numbers.[5] Mr. Jacobs, at a later period, found at the same home that the children then there numbered 39, divided among 28 families as follows :—

Relationship of Parents	Number of Families Represented	Number of Children Produced	Average Number per Marriage	Number of which Deaf-mute	Per Cent. Deaf-mute on Total of 39
First-cousins .	3	21	7·0	9	23·0
Other cousins .	4	15	3·7	6	15·4
Unrelated . .	21	109	5·2	24	61·5

which makes the number of deaf-mutes produced by relations greatly in excess of the proportion of such marriages in the community.

Mr. Jacobs justly points out that these figures are much too small to give reliable results,[6] and we see that this is so,

[1] *Comptes Rendus*, 1862, lv. p. 128. [2] Dally, *ut sup.* p. 93.
[3] G. H. Darwin, 'Marriages between First-cousins,' in the *Journal of the Statistical Society*, xxxviii. 180. [4] See below, chap. v.
[5] Jacobs, 'Studies in Jewish Statistics,' in the *Jewish Chronicle*, for January 12, 1883, pp. 10, 11.
[6] Jacobs, *Journal of the Anthropological Institute*, *ut sup.* p. 32.

since at the former inquiry there was no excess ; yet at another period there is a great excess. Let us look at them in another way :—

	First-cousins	Other Cousins	No Relations
Total number of children born . .	21	15	109
Percentage of children born . . .	14·48	10·34	75·17
Percentage of deaf-mutes . . .	23·0	15·4	61·5
Difference of last two	+7·6	+5·0	−13·8

Here we see an intensification of hereditary influence where there is relationship between the parents, which I shall show in the next chapter is probably the case in consanguineous marriages, but nevertheless does not necessarily imply a greater total proportion of deaf-mutes born from such marriages.

In the course of his inquiry as to the relative fertility of first-cousin marriages, as compared with others, Mr. Jacobs collected 86 cases.[1] Among these there were—

9 cases in which the marriage was recent, or the wife died early.
3 ,, ,, no details were given.
26 ,, ,, the total of the children born is not given.
48 ,, ,, ,, ,, is given.

These 48 marriages produced 252 children, or an average of 5·2 per marriage (inclusive of 4 barren marriages). Of these, 8 were deaf-mutes, or 3·17 per cent., and 11 were imbecile or insane, that is, 4·32 per cent. ; certainly not a high average, as will be seen in the next chapter. If all the families are reckoned in which the number of children who are deaf-mute or imbecile is given, and including the 26 marriages in which the total number of children born is not given, but excluding the 9 in which the marriage is recent (none of which showed evil results), and excluding the 3 of which details were not given (which were probably without

[1] See the *Journal of the Anthropological Institute*, xv. 28, No. 1 for August 1885. Mr. Jacobs kindly gave me more detailed information on these and the previous figures, but, as will be seen, I cannot take quite the same views on the results as he does.

evil results), there are 74 cases of marriage between first-cousins, which (if we put one family in which the number of deaf-mutes is not given at 3) produced 11 deaf-mutes, or an average of 0·15 per family, and taking only those families which produced deaf-mutes (6) an average of 1·9 per family; while in Ireland the average was about 1·2 for non-consanguineous marriages. In the same way for the imbecile and insane the average was 0·3 per family for all, and 2·3 for those in which insanity appears (taking two cases, in which the numbers are not given, at 5 and 2 respectively).

Dr. Alings gives the following:—[1]

	Number for one Deaf-mute of		
	Catholics	Protestants	Jews
In the Duchy of Nassau in 1863 . .	1,398	1,102	508
In three Dutch Establishments, 1859, compared with the total population . .	11,985	13,380	2,179
The same in 1866, compared with the total population of 1859 . . .	9,424	10,675	2,658

And here we see that in Nassau the Protestants have a greater proportion of deaf-mutes than the Catholics, while in Holland this proportion is reversed, which shows that if religion is a factor these statistics are not reliable. In all, indeed, the Jewish deaf-mutes are proportionately the most numerous; but if these statistics cannot be depended upon in one matter, neither can we depend upon them in another. We do not even know whether proportionately more Jews are placed in charitable institutions by their brethren; yet this is most probable, for the Jews take far more care of their poor and infirm than the Christians do.

Yet Dr. Liebreich, the celebrated oculist, gives his support to M. Boudin's supposition, and adds that *retinitis pigmentosa* is also much commoner among the Jews than among the Christians, since in the establishment for deaf-mutes at Berlin, of 14 patients who also suffered from this disease, 8 were

[1] Alings, *Het Aantal Doofstommen in Nederland, vergeleken met dat in andere Landen*, 1867, pp. 14, 15.

Jews.[1] Whether this disease is really caused by consanguineous marriage is discussed below; but are his statistics on the deaf-mutes who are Jews trustworthy? He says that in a total number of 341 deaf-mutes in the asylum at Berlin, 42 were Jews; while of 223 out of these, who were born in Berlin, 23 were Jews; which is one deaf-mute in every 2,215 of the Christian natives, and one in every 673 of the Jewish.[2] Hence, if we are to accept the results taken from this asylum as an accurate proportional reflection, the Jewish deaf-mutes are very greatly in excess of what we should expect. But here is the weak point. Asylums are not, and cannot be, a correct mirror to the general population. We have seen how very widely M. Boudin was misled by deductions from the Paris asylum; and no one can accept a theory without hesitation which is so slenderly supported by statistics. Even should we grant that he has proved the Jewish deaf-mutes greatly to exceed the Christian, we have no evidence to show that this is due to consanguineous marriage; on the contrary, we have far more reason to believe that those causes which lead to mental disease in general, and which in all probability work more on the Jewish than on the Christian population, will also partially show themselves in deaf-mutism and other mental maladies. The fact is, that the Jews are not influenced, as far as our evidence as yet goes, either for good or for evil by their consanguineous marriages, unless these are the cause of their greater ability to withstand the variations of climate. They transmit their type unchanged, as do all races of men and animals when they constantly breed in-and-in; but they have probably been somewhat affected by the centuries of persecution they have endured, and still endure, in many parts of the world. The history of the Jewish community of one Christian town is very much the same as that in any other; and as ufficient idea of the miseries they have endured, and the marvellous elasticity which has preserved them from extinction when so many other outcast races have been utterly stamped out, may be

[1] Liebreich, Abkunft aus Ehen unter Blutsverwandten, etc. in the *Deutsche Klinik*, xiii. 54.

[2] Liebreich, *ibid.*

conveyed by the history of the Roman Jews, probably the oldest unbroken community of that nation in Europe. The quarter assigned to them in that town, known as the Ghetto, was the most foul, most crowded, and most evil-smelling part of that formerly evil-smelling city. The position is so low that the whole quarter is very frequently under water; an inconvenience which the inhabitants remedy by having their houses communicating with each other by the upper floor, so that this forms, as it were, an upper street. Yet they inhabited this den from the time of Paul IV., A.D. 1555, with occasional short-lived mockeries of liberty, and long spells of diabolical persecution. During all this time it is far from probable that they ever received the slightest amount of fresh blood in their veins. What inducement was there to go to the centre of persecution? But they have constantly emigrated. As soon as ever a member became rich enough, he left this wretched place; and thus much property and much mental capital was constantly withdrawn, and a disproportionate amount of poverty left behind. Under Claudius the Roman Jews numbered 8,000; about the year 1667 there were some 4,500; not long before the Italians entered Rome there were only 4,000; but under more humane laws they have since then risen to 4,500 again. And yet, despite their persecution, despite their bad drainage, their dirty habits and chronic state of overcrowding, the Ghetto seems always to have been one of the healthiest places in Rome. The death-rate has been small, fever rare, fewer died when cholera was devastating Rome in 1837 of that disease in their quarter than in any other quarter of the city. They throve and multiplied, paid heavy taxes to the Papal Government, and supported their own poor; they founded a university as well as schools, and they supported a synagogue. Truly, as Mr. Story says, 'in a people thus oppressed' must there be 'immense vitality and energy, or they would long ago have ceased to exist.'[1]

[1] Story, *Roba di Roma*, pp. 306, 310, 322, 327, 332.

CHAPTER V.

THE VALUE OF STATISTICS HITHERTO COLLECTED CONCERNING MARRIAGE BETWEEN NEAR KIN EXAMINED.

THE Parasyngeniasts have advanced many figures in support of their theories, taken chiefly from collected cases, the deductions from which, if trustworthy, may almost be said to be conclusive as to the harmfulness of marriages between near kin. But in making use of any statistics on the proportion of diseased from consanguineous and non-consanguineous marriages, it is necessary first of all to know the proportion that one class of marriages bears to the other. This unfortunately we do not know, and never shall know with any approach to accuracy, until the previous blood relationship of parties who have contracted marriage has been inquired into by the census commissioners. Of course some attempts have been made to determine the proportion which consanguineous marriages bear to the whole. Mr. G. H. Darwin pursued the following method, which, since he takes care to check his results by several different inquiries, all converging upon the same point, is probably the most reliable we as yet possess. His first object was to determine the proportion of marriages between persons of the same surname which are marriages of first-cousins. From a calculation of the chances of two people of the same name marrying, derived from the Registrar-General's report on the whole number of names in the register, he found that, were there no cause, such as cousinship, tending to increase the number of same-name marriages, the chance of such a marriage was 0·092 per cent. He then had counted 18,528 advertisements of marriages in the same paper, the 'Pall Mall

Gazette,' and found 232 were same-name marriages, or 1·25 per cent. If we deduct 0·092 from this, the resulting 1·158 per cent. should represent the percentage of consanguineous marriages between persons of the same name for the particular class who advertise.[1] In order to check this result he had the marriages of all the men in the pedigrees of Burke's 'Landed Gentry' analysed, and, excluding all those in which the relationship could not be determined, he found that out of 9,549 marriages 144 were same-name marriages, or 1·5 per cent.; that is, only 0·25 per cent. higher than that obtained from the analysis of advertisements; which, considering that the 'Landed Gentry' represent a more propertied class, who are therefore more likely to contract consanguineous marriages, is strikingly confirmatory of the accuracy of the results; and of these 144, half, or 0·75 per cent., were marriages between first-cousins. He then did the same with the 'English and Irish Peerage,' finding 18 out of 1,989 marriages were between persons of the same name who were first-cousins, or 0·91 per cent. Now in the 'Landed Gentry' 72 of the 144, or half the marriages between persons of the same name, were found to be between first-cousins. Applying the same rule to the 'Peerage,' there should have been 36 same-name marriages, or 1·8 per cent.; a higher proportion than either of the two previous, as was to be expected.

He next endeavoured to ascertain the proportion of marriages between first-cousins who did not bear the same surname. To this end he attempted an amateur census, sending out about 800 circulars to members of the upper middle and upper class, but avoiding so far as possible sending circulars to more than one member of interrelated families. From those circulars which were returned he found that out of a total of 248 marriages between first-cousins, in 182 cases the parties did not bear the same surname. If, however, to these are added 29 marriages between parties who were not first-cousins, yet who bore the same surname,

[1] Mr. Darwin was anticipated in this by Mr. G. C. Thompson, who during two months noted the number of same-name marriages advertised in the *Times*. These he found were just 1 per cent. of the total. See the *Journal of Anthropology* for July 1870, No. 1, p. cli.

and were therefore in all probability related, we have 182 cases out of the 277 in which the parties did not bear the same surname, and 95 in which they did. For every 100 marriages between persons of the same name, there would therefore be, if these returns are reliable, 261 marriages between first-cousins.

If these returns are reliable, therefore, we should deduce the proportion of first-cousin marriages from the advertisements as about $(232 \times 2{\cdot}61 =)$ 605·5 in 18,528 marriages, or 3·26 per cent.; those from the 'Landed Gentry' at $(144 \times 2{\cdot}61 =)$ 375·8 in 9,549, or 3·93 per cent. The number of same-name marriages other than first-cousins from the 'Peerage' is omitted. From the numbers counted in the 'Landed Gentry' these should be in the proportion of 100 per cent., that is, in 1,989 marriages $(18 \times 2 =)$ 36 were between persons of the same name, and therefore $(36 \times 2{\cdot}61 =)$ 93·9 marriages out of the 1,989 should be between first-cousins, or 4·7 per cent. But according to the returns obtained from the circulars on 95 marriages between persons of the same name, 66 were between first-cousins, or not twice, but 2·28 times the same-name marriages not between first-cousins. We have, therefore, $18 + \left(\frac{18}{2{\cdot}28} = 7{\cdot}9\right) = 25{\cdot}9$ as the total number of same-name marriages from the 'Peerage,' and $(25{\cdot}9 \times 2{\cdot}61 =)$ 67·59 as the total number of marriages between first-cousins, or a percentage of only 3·4, which does not seem quite satisfactory. Taking the mean, again, between the values of 2 and $\frac{1}{2{\cdot}28}$, we get a total of same-name marriages of 30·9 and $(30{\cdot}9 \times 2{\cdot}61 =)$ 80·77, or a percentage of 4·06, which looks much better. From 181 circulars Mr. Darwin further obtained, directly, a total number of 125 marriages between first-cousins on 3,663 marriages, or 3·41.

From all these various sources we have therefore—

	Out of all marriages there were between first-cousins
From advertisements (middle and upper classes) . .	3·26 per cent.
,, Circulars (upper middle and upper classes) .	3·41 ,,
,, Landed gentry	3·93 ,,
,, Peerage	4·06 ,,

The great weakness, however, in these statistics, as Mr. Darwin himself points out, is that they all rest on the accuracy of the returns in themselves, which, of course, were not numerous enough to overcome slight errors. It is obvious, for instance, that many first-cousin marriages may have been omitted from the returns, while the total of all marriages was correct; also that the marriages between first-cousins not of the same name may have been omitted. As a further check, Mr. Darwin therefore drew up a list of only those marriages which were contracted by the reporter's uncles, aunts, brothers, and sisters, since he was less likely to omit any of these; with the result that the proportion of same-name first cousin marriages to same-name not first-cousin marriages was as 2 to 1, and there are 258 marriages between first-cousins for every 100 marriages between persons bearing the same name. We get then—

From the advertisements	. . . . .	3·23 per cent.
,, Peerage	. . . . .	3·5 ,,
,, Landed gentry	. . . . .	3·89 ,,
,, Circulars (direct return)	. . .	4·2 ,,

Mr. Darwin thinks, upon the whole, that marriages between first-cousins of the same name are to marriages between first-cousins of different names as 1 to 4; and that marriages between persons of the same name are about 0·57 of all the same-name marriages. Applying this to the previous inquiry we have:—

From the advertisements	. . . . .	3·54 per cent.
,, Landed gentry	. . . . .	3·75 ,,
,, Peerage	. . . . .	4·5 ,,

Mr. Darwin then obtained a return of the proportion of same-name marriages to all marriages in the year 1872 in London, several large towns, and some agricultural districts:—

	Number of marriages registered	Per cent. of same-name marriages	Ratio to the number (1·25) from advertisements	Percentage of first-cousin marriages taken by last method.
London district .	33,155	0·55	0·50	1·56
Urban districts .	22,346	0·71	0·58	2·02
Rural districts .	13,391	0·79	0·67	2·25

which shows that in the London districts the first-cousin marriages are about 1·56 of all; in the urban, 2·02; and rural, 2·25.[1]

In France some attempt has been made at an official return of consanguineous marriages, not, indeed, by means of a census, but by the declarations necessary before the civil marriage. M. Boudin[2] cites the following for the years 1853 to 1859, and the remainder of the table is given by M. Lacassagne:—[3]

Marriages in	Nephews and Aunts	Uncles and Nieces	First-cousins	Total of Consanguineous	Total of all Marriages	For 100 of all Marriages there were Consanguineous
1853–1859. All France (except 4 departments) .	329	921	17,872	19,911	2,020,224	0·985
1861–1874.						
All France . .	897	2,451	47,124	50,472	4,164,182	1·212
Rural France .	721	1,630	34,457	36,808	2,893,854	1·270
Urban France .	163	608	9,685	10,456	1,008,295	1·036
Seine Department	13	213	2,982	3,208	262,033	1·219

We must note, however, that both in these returns and in Mr. Darwin's, mistakes can only occur in the direction of reducing the proportion between consanguineous and non-consanguineous marriages. In all cases it is probable that the total of all sorts of marriages will betolerably correct, but that the question as to the relationship will in all cases be correctly answered, or even be asked at all, is impossible.

In 1863 M. Behic, Minister of Agriculture, etc. wrote to the prefects, enjoining greater accuracy in their returns, and in the course of his letter he says: 'Information derived from trustworthy sources authorises me to believe that these returns are remarkably incomplete as regards marriages between first-cousins.'[4] The difference in the percentage of

[1] G. H. Darwin, 'Marriages between First-Cousins,' in the *Journal of the Statistical Society* for June 1875, xxxviii. 153–164.

[2] *Ann. d'Hygiène*. Paris, 1862. 2nd series, xviii. 7. The returns for the year 1853 do not include the departments of Creuse, La Manche, Seine, and Vaucluse.

[3] *Dict. Encyclop. des Sciences Médicales*, art. 'Consanguinité,' xix. 708, 709. Paris, 1877. I have given the percentages on the grand totals.

[4] *Gazette Méd. de Paris*, 3rd series, xviii. 806.

consanguineous marriages shown in the table of 1·21, as compared with 0·98, is the expression of the greater care exercised ; but that 1·21 represents the whole number of consanguineous marriages is extremely doubtful.

In Alsace-Lorraine, in Prussia, and in Italy, according to official returns :—[1]

Per cent. on all Marriages	Nephews and Aunts, Uncles and Nieces	First-cousins	Total
In Alsace-Lorraine, 1858-65 . . .	0·093	1·333	1·426
,, ,, 1872-75 . . .	0·051	1·012	1·068
In Prussia in 1875	0·062	0·612	0·674
In Italy, 1868-71			0·841
,, 1872-75	0·062	0·629	0·691

I suspect that here again, especially in Prussia and Italy, the returns must be very imperfect ; but I have no means of judging how imperfect. In Prussia no dispensation is necessary for the marriage of first-cousins ; and it is highly probable that the question of the relationship of the candidates for marriage is rarely put. In the case of Italy also, where intercommunication is difficult and dispensation easy, the official return seems to be far too low.

Dr. Down made careful inquiry into the family history of 200 persons who were sane and healthy, lived in different districts, and who belonged to different families. He found only one of these was the offspring of first-cousins, and concludes therefore from this that consanguineous marriages form 0·5 per cent. of all marriages.[2] Dr. Mitchell estimates them at about 1·5 per cent. ; a rough guess on the basis of his inquiries.[3] From an inquiry into the parentage of deaf-mutes, by the Census Commissioners of Ireland, there were :—[4]

[1] Cited by M. Stieda, 'Les Mariages consanguins,' in the *Annales de Démographie Internationale*, iii. 31, 33, 36. Tables, 1, 2, 7. M. Stieda goes on to compare the number of consanguineous marriages of various years in different countries with the birth-rate, mentally afflicted, etc. But I venture to think that a direct comparison, even were the data quite trustworthy, is not possible. Take the birth-rate in France, for instance. It has been diminishing for years from causes which have nothing to do with consanguinity, but chiefly on account of the unwillingness of the people to have many children.

[2] Down, *London Hospital Reports*, 1866, iii. 226.

[3] Mitchell, *Memoir read before the Anthropological Society of London*, 1866, ii. 415, 423.

[4] *Census of Ireland*, 1881, Table 111 and p. 43 ; *Report of the Status of Disease*, 1871, Table X. and p. 21 ; *ibid.* 1851, p. 17.

In the Year	Out of Marriages	Consanguineous Marriages	Degree	Per Cent.
1881	2,587	135	Between cousins up to the fourth	5·2
1871	3,005	201	,, ,, ,, sixth	6·7
1861	3,523	242	,, ,, ,, fourth	6·9
1851	3,415	170	,, ,, ,, third	4·9

But this, of course, is only the parentage of deaf-mutes, and would only apply if these correctly represent the community, which, as we shall see below, they do not.

Dr. Cameron, from private inquiries, found 38 in 3,470 children of first-cousins in Ireland, or 1·1 per cent., and in 1879–80, from inquiries made at three workhouses, 5 out of 4,106 who answered, said that their parents were first-cousins,[1] or 0·14 per cent. Here again the probability is that many said their parents were not related when they were, and that many of those who did not answer were also born of first-cousins.

We have therefore absolutely no basis from which to start a statistical inquiry as to the effect of consanguineous marriage on the offspring, and can only proceed on very imperfect estimates indeed.

Among the many charges brought against consanguineous marriage, sterility, absolute or comparative, occupies a conspicuous position. It will be convenient to consider this charge first; because, if it be true, then the proportion of children born to consanguineous marriages is smaller than the proportion born in others, and consequently if the former do not produce disease we should find a smaller proportion of diseased born from consanguineous marriages than is the proportion of the number of such marriages to other marriages.[2] In the same way, the reverse should be the case if consanguineous marriages produced on the average larger families than other marriages.

According to Oesterlen, 20 per cent. of all marriages in Great Britain were sterile in the year 1851;[3] Simpson found

[1] Cameron, *Transactions of the Academy of Medicine in Ireland*, i. 219, 220.

[2] Mr. Jacobs first called attention to this consideration in the *Jewish Chronicle*, for January 12, 1883, p. 10.

[3] Oesterlen, *Medic. Statistik*, p. 196.

11·7 per cent. of the marriages were sterile; Dr. West found the average about the same;[1] and Dr. Duncan puts it at 15 per cent.[2] Taking an average from the last three we get 12·8 on which to base our comparisons; certainly a low average for the sterility of marriages in England. As for the prolificness of marriages, there were born in Scotland, which is a very fertile country, an average of 4·64 legitimate children on every marriage in 1861; in England only 3·89; and the average is generally about the same; in France, according to M. Husson, the average is decreasing; in 1866 it was only 3·1 per marriage for all France, and only 2 per marriage for Paris, while fifty years before it was 3·7 for all France.[3]

Now, M. Devay refers to 121 marriages between relations, of which 22 were sterile, or 18 per cent.[4] From 10 marriages in his own family, cited by M. Seguin, between first-cousins and nearer relatives, 61 children were born, or an average of 6·1 per marriage, and more may have been born since.[5] Of 46 marriages between near kin reported by M. Voisin, 2 proved barren, or 4·3 per cent., and 174 children were born, or an average of 3·7 for every marriage barren and fertile.[6] Of 833 cases of marriage between relatives collected by Dr. Bemiss, 53 proved barren, or 6·3 per cent.; the remaining marriages produced 3,942 children, or an average of 4·7 per marriage barren and fertile;[7] and the following table shows that marriages between blood relations are not the less fertile the closer the relationship:—

10	Cases of incest between parent and child, or brother and sister, gave an average of children per marriage of .	3·10
12	Marriages between uncle and niece, or aunt and nephew, gave an average of	4·42
56	Marriages between blood relations who were themselves born from consanguineous marriages gave an average of	4·18
27	Marriages between double first-cousins gave an average of	5·70

[1] *Medical Times and Gazette*, July 20, 1867, p. 76.
[2] Duncan, *Fecundity, Fertility, and Sterility*, p. 193.
[3] Duncan, *ibid.* pp. 105, 106, 109, 110, 185, 186.
[4] Devay, *Du Danger*, etc. p. 93.
[5] Seguin, *Comptes Rendus*, 1863, lvii. 254.
[6] Voisin, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 447.
[7] Bemiss, *Transactions of the American Medical Association*, 1858, xi. 420, 421.

580 Marriages between first-cousins gave an average of . 4·80
112 Marriages between second-cousins gave an average of . 4·58
12 Marriages between third-cousins gave an average of . 4·92
24 Marriages between first-cousins irregularly reported gave an average of . . . . . 5·0[1]

M. Cadiot collected 54 cases of marriage between relations, of which 14 were barren, or nearly 26 per cent.; but he does not give the total number of children produced.[2] Of 459 cases of consanguineous marriage given in the Appendix to this work, which include some of those already cited, there were 29 barren marriages on the total, or 6·3 per cent.[3] The fertility, as affected by the relationship, may be seen in the following table :—

ANALYSIS OF CASES FROM APPENDIX.

Relationship	Number of Marriages	No. of these Barren	Per Cent. of Marriages Barren	Number of Children where each Sign ∞ is taken = 1, 'several' = 3, and 'many' = 4		Cases where only those are taken in which the Total Number of Children is given		
				Total	Average per Marriage	No. of Marriages	No. of Children	Average per Marriage
Uncle and niece, or aunt and nephew .	41	4	9·75	136	3·317	27	87	3·23
First-cousins born from cousins . .	21	1	4·76	84	4·0	15	61	4·06
First-cousins . .	263	17	6·46	1,032	3·92	186	748	4·02
First-cousins once removed . .	28	3	10·7	134	4·78	27	131	4·85
Second-cousins . .	55	3	5·46	216	3·93	39	163	4·18
More distant relationship . . .	29	0	0·0	107	3·7	18	73	4·0
Children of cousins and no relation .	36	3	8·34	102	2·83	14	36	2·57
No relationship . .	17	2	11·76	53	3·12	12	40	3·34
Relationship not stated . . .	10	1	10·0	68	6·8	10	68	6·8

This table is formed upon the same system as that of Dr. Bemiss,[4] but it shows none of the beautiful regularity we are invited to observe in that. The few cases of incest are omitted

[1] Bemiss, *ibid.* pp. 420, 421. I have corrected these averages: see the Appendix to this work.
[2] Cadiot, *Comptes Rendus*, 1863, lvii. 978.
[3] See Appendix: Index to Cases.
[4] See the Appendix to this work.

because, in the nature of things, more than one child is hardly likely to be born. The highest degree of barrenness is in marriages between strangers, over twice as great as the barrenness in marriages between first-cousins born from marriages between cousins! The next highest is between first-cousins once removed. The lowest of all are marriages between persons more distantly related than are second-cousins! The highest average of children is in marriages where there is relationship, but it is not defined. The next, in first-cousins once removed. The lowest, in children of first-cousins with no relation; the lowest but one in marriages between strangers!

In 17 cases of consanguineous marriage collected by Mr. Buxton,[1] 85 children were born, or 5 per marriage.

Again, in 62 cases of consanguineous marriages of Jews, collected by Mr. Jacobs,[2] 3 were barren, and 3 were recent, which gives, omitting the latter, a proportion of 5·4 per cent. as barren. And to 31 marriages between first-cousins in which the number of children was ascertained, including the three barren cases and also one in which the wife died within the first year of marriage, 144 children were born, or an average of 4·6 per marriage, including the barren, and 5·3 excluding them; whereas it is well known that the Jews have generally a lower birth-rate than the rest of the population.

Mr. Darwin noted 116 marriages between first-cousins in Burke's 'Peerage' and 'Landed Gentry,' in 19 of which there was insufficient information as to the number of sons born, and in all of which the information relative to daughters was very defective. Neglecting the 19 marriages and the daughters, we have 97 marriages, which produced 202 sons, or 2·07 sons apiece. Then Mr. Darwin took at random 217 cases of marriage between unrelated persons from the same work, and found that they produced 416 sons, or 1·91 per marriage. He further noted 93 marriages of the offspring of cousins in which the number of sons was given, and although some of these marriages were recent, 180, or 1·93 per marriage, were recorded.

[1] G. H. Darwin, 'Marriages between First-Cousins,' in the *Journal of the Statistical Society of London*, xxxviii. 171, note.

[2] Jacobs, 'Studies in Jewish Statistics,' in the *Jewish Chronicle*, January 12, 1883, p. 10.

In all these cases, however, only the sons who survived infancy are put down, and these figures can only, therefore, be compared with each other. Of the 97 marriages between first-cousins 14 produced no issue that survived infancy. Of the 93 marriages of children of cousins 16, and of the 217 non-consanguineous marriages 33, produced no issue that survived infancy.[1] The results are therefore—

	In which Husband and Wife were First-cousins	In which one Party was the Child of First-cousins	In which there was no Relationship
Number of marriages observed . .	97	93	217
Number of sons who survived infancy .	202	180	416
Number of cases in which no issue survived infancy	14	16	33
Percentage of such sterile marriages .	14·4	17·2	15·2
Average number of sons on all marriages	2·07	1·93	1·91
Average number of sons per fertile marriage	2·43	2·34	2·26

From these and the foregoing figures it appears that consanguineous marriages, so far from being less prolific than others, are, on the contrary, more prolific, and a much smaller percentage are barren. But the fact is that these statistics are not strictly reliable, although they are advanced chiefly to show that these marriages are harmful; for they have been collected mostly by the Parasyngeniasts for observed evil results, and consequently they have unconsciously chosen fertile cases to report upon. I may add, however, that as far as I can judge from these cases, there appears to be no foundation for the theory that they are more likely to be barren. On the contrary, the probability is that they are rather more fertile, since cousins generally marry younger than do strangers, and Dr. Duncan finds that such marriages are the most prolific,[2] provided always that the contracting parties are not too young.

In spite of this fact, obvious to anyone who has at all looked into the subject or has made any pretence to a statistical inquiry, M. Devay, and after him M. Boudin, argue that

[1] G. H. Darwin, 'Marriages between First-Cousins,' in the *Journal of the Statistical Society of London*, xxxviii. 179 181.

[2] Duncan, *Fecundity, Fertility, and Sterility*, p. 144.

because noble families generally marry in-and-in they die out; and then, continuing their argument in a circle, they assert that because noble families die out therefore consanguineous marriages are less prolific than are others.[1] The idea has not even the merit of novelty to atone for its untruth, for, as we have already seen, it probably took its origin from the letter of Pope Gregory, who most likely made his mistake because he did not understand the sense of Moses' words.[2] Esquirol says, talking of mental degeneration as caused by consanguineous marriages: 'The same may be said of the great lords of France, who are almost all relations. What a lesson for fathers, who in the marriage of their children consult rather their ambition than the health of their descendants!'[3] Moheau asserts that when in the centre of the French *noblesse*, one seems to be among a crowd of sick people.[4] According to the 'Revue Britannique,' it is said that when a grandee is announced in Spain, everyone expects to see a lump of deformity.[5] Salvandy remarks that one can see at once if there has been a *mésalliance* in a noble family by the improvement which results.[6] Knight says, 'Amongst ancient families, quick men are abundant; but a deep and clear reasoner is seldom seen. How well and how readily the aristocracy of England speak! how weakly they reason!'[7] But although these statements may, in a few cases be partially true, it is one thing to notice a disease, and quite another to assign its cause. Though at certain epochs, and in certain countries, a part of the nobles may waste their bodies and substance in riotous living, we never see that their consanguineous marriages lead to their degeneration. M. Devay cites the family of the Chevalier Bayard as an example of a great family which has died out, since but five persons now remain out of an original total of sixty-one. To strengthen his argument, he adds the case of an idiot boy, aged twelve years, who was descended from a noble family, the members

[1] Devay, *Du Danger*, etc. pp. 198-204; Boudin, *Ann. d'Hygiène*, 1862, xviii. 46-52.
[2] See p. 25, note 4, of this work.
[3] Esquirol, *Mental Maladies*, trans. by E. K. Hunt, p. 49.
[4] Cited by Châteauneuf, *Ann. d'Hygiène*, 1846, xxxv. 40. [5] *Loc. cit. ibid.*
[6] St. Lager, *Etudes sur les Causes du Crétinisme*, etc. p. 112.
[7] Cited by Walker, *On Intermarriage*, p. 434.

of which were in the habit of closely intermarrying among themselves. His elder brother, though perfectly healthy and successful in his studies, was of a most violent temper. There had also been epilepsy in the family.[1]

If these marriages are sterile, says M. Mantegazza, this at least must be due to consanguineous marriage, and to no other cause, for most certainly it cannot be hereditary.[2] The probability, however, is that it is hereditary. Mr. Galton points out that the heirs of noble houses often retrieve their fortunes by marriage with an heiress, though she be of plebeian extraction. For a girl to be an heiress she can have no brothers; hence there is every probability that she will inherit the comparative sterility of her parents. Mr. Galton brings forward some evidence to corroborate this belief;[3] and Mr. Macdonald also recommends the farmer to 'select his rams and ewes from among twins, or the progeny of fertile parents, fecundity being well ascertained to be hereditary.'[4] It is therefore the cross, if anything, which brings sterility into noble families, and not any intermarriage with near kin. But there does not seem to be any marked sterility or loss of viability. It was shown at a meeting of actuaries, in April 1861, that the families of the English peerage are an unusually long-lived class.[5] Châteauneuf shows that the Boileau family lasted scarcely two centuries, although they had sixteen male children; Racine's family only lasted three generations; Crébillon's lasted but one generation; Molière died childless; Corneille never married. Where, he asks, are now the descendants of Juvénal des Ursins, of de Mêmes, of Lhospital, L'Huillier, Lemaître, Pothier, Harlay, or de Thou?[6] Did these families die out from marrying in-and-in? Malthus found that out of 487 families admitted to the rights of citizenship, between the years 1583 and 1654, by the sovereign Council of the Canton of Berne, but half existed one century, and only 168 still existed

[1] Devay, *Du Danger*, etc. pp. 111, 112; and *Un Mot*, etc. pp. 33–35.
[2] Mantegazza, *Studj sui Matrim. Cons.* p. 34.
[3] Galton, *Hereditary Genius*, pp. 130–140. The evidence is not very strong, but his theory is highly probable in itself.
[4] Macdonald, *Cattle, Sheep, and Deer*, p. 470.
[5] Letter to the *Lancet*, signed 'Genesis,' Nov. 15, 1862, p. 553.
[6] Châteauneuf, *Ann. d'Hygiène*, 1846, xxxv. 54, 55.

in the year 1783; while of 112 families who belonged to the Council of Berne, in 1653, only 58 still existed in 1796. In fine, Châteauneuf concludes that seven or eight consecutive generations, lasting about three centuries, is the average life of a nobleman's family in France; and shows that, so far from being less prolific, they are perhaps even more prolific than ordinary families.[1]

M. Passy showed that any sterility of nobles is only a part of a more general law that the birth-rate is low in all well-to-do families. The smallest number of births are found in the richest towns of France, and in Paris the smallest number are born in the richest quarters.[2] We cannot compare the viability of a nobleman's family two or three centuries ago with the present viability of even an ordinary family. Many of the sons could not marry, since the law of entail forced all younger sons either into the service of the Church or into the army. Those who chose the former were of course obliged to live unmarried; while those who entered the army were killed in wars, crusades, in internecine strifes, and duels, which latter not only concerned the principals, but often included a long train of noble seconds. When war ceased to be the every-day occupation of gentlemen, they spent their time and money in debauchery, soon lost all their substance, and were forced to have recourse to selling themselves to the highest bidder among the daughters of the *bourgeoisie*; a state of things very much deplored by Count Boulainvilliers in his writings,[3] and, as we have seen, thus introduced sterility into naturally fertile families. M. Bourgeois further points out that since neither vaccination nor the treatment of children was understood, and since the education of boys at that time necessarily subjected them to very rough treatment, their viability was naturally far lower than it is in modern times, while we have no standard in plebeian families of that time to compare them with.[4]

[1] Châteauneuf, *Ann. d'Hygiène*, 1846, xxxv. pp. 55, 56, 32 34.

[2] Passy, trans. by Sir J. Boileau, 'On the Division of Heritable Property,' etc. in the *Quarterly Journal of the Stat. Soc. of London*, for August 1843, vi. 189.

[3] Châteauneuf, *Ann. d'Hygiène*, 1846, xxxv. 32-36, 38, 44-50.

[4] Bourgeois, *Quelle est l'Influence des Mariages Cons.* etc. pp. 22, 23. 'M. Benoiston' (de Châteauneuf), says Devay, 'constate *l'effrayante mortalité des*

Various ancient authors have noticed the curious fact that certain persons are barren together, who are both perfectly fertile with other people.[1] This was the case with Augustus and Livia, and this it is which has induced certain authors to attribute barrenness to consanguineous marriages. They see a case where two relatives marry and are childless; the one dies, and the other marries again and has children. Yet although this case is more partial than those noticed by Pliny, the observer immediately attributes it to consanguinity, and not to natural barrenness in one of the parties.[2] We know little of the causes of this barrenness, and hence a great many causes have been assigned to it. One that is often overlooked is obesity. Aristotle notices this cause in his *History of Animals*,[3] and Dr. Hewitt[4] agrees with him. Mr. Youatt asserts that the English export trade for breeding purposes has been much spoiled by the cattle shows, for now it is essential that the animals should be much fattened; and Mr. Laverack, also, recommends that the bitch selected for breeding should not be too fat; 'she should be rather lean to ensure fruitfulness.'[5] We shall see that unacclimatised animals are often sterile, and that races of animals and plants are generally sterile with each other in proportion to their

enfants en bas âge chez les nobles; il voit dans ce fait une cause puissante de leur décadence; je lui réponds: "Très-bien; mais ce qui pour le savant académicien est une *cause*, devient un *effet* pour le physiologiste. Où git donc la cause de cette effrayante mortalité des enfants nobles? On ne saurait alléguer, ici, la misère et les privations; il y a donc là un fait de l'ordre vital, un phénomène organique dans la déchéance de ces grandes familles. Qui doit mieux en rendre raison que la consanguinité dont les effets connus, bien constatés (!), sont d'introduire un principe léthifère dans les races comme dans les familles? Et puis d'ailleurs toutes les familles nobles, ou privilégiées, n'ont pas guerroyé, toutes n'ont pas suivi l'état ecclésiastique, et toutes ont eu le même déclin."' (Devay, *Un Mot*, etc. p. 33). M. Devay, however, in the heat of his defence against the attacks of M. Dally, takes no notice of the unimportant fact that Châteauneuf does not say the viability of noble families was less than that of commoners' families. Châteauneuf merely says that nobles then lived a shorter life than is usual in our times, that the mortality of children was among all classes greater than it is now, and that there were many causes to extinguish ancient families.

[1] Pliny, book vii. chap. xi. translated by Bostock and Riley, who also cite Hippocrates, Aristotle (*Hist. Anim.* book vii. chap. vi. sec. 2). Lucretius, book iv. chap. 1242 *et seq.* And also in the case of animals, see Darwin, *Animals and Plants*, etc. 1875, ii. 146.

[2] See the Appendix, Cases Nos. 60, 195.

[3] Aristotle, *Hist. Anim.* book iii. chap. xiii. sec. 4; book v. chap. xii. sec. 9.

[4] Hewitt, *Diseases of Women*, p. 689.

[5] Youatt, *On the Pig*, edited by Sidney, pp. 47, 48; Laverack, *The Setter*, etc. p. 32; Stephens, *The Book of the Farm*, i. 258.

difference. The most usual cause is probably disease in the female, of which obesity is only one form ; but brutal treatment may also lead to barrenness.[1] That it is due to consanguineous marriage is, however, obviously untenable, as we have already seen that, even in the cases collected by the Parasyngeniasts, the average of barrenness is apparently below the normal.

Of no disease is the exciting cause more obscure than in crétinism ; it is a malady which forces itself upon the notice of everybody, and, like other widely spread and little understood diseases, has been ascribed to every origin that the ingenuity of man could devise. The very list of supposed causes is so great that it occupies three pages of Dr. St. Lager's luminous work on the subject ; and as every one of these alleged causes has found several supporters, it is not astonishing that so determined a blackener of these marriages as Devay should have accused them of creating crétinism.[2]

Now, it is very nearly certain that goître is an early stage of crétinism, or rather that the same conditions which show their presence by goître, will in time lead to that disease. For we find that the greater number of crétins also have goîtres ; and that even those who have no apparent goître nevertheless have got a tumefaction of the thyroid gland, which either develops internally or merely impedes respiration and thickens the neck generally. Wherever there are crétins there are goîtreux ; but the reverse is not always the case, and hence goître is probably the first stage. Thus in descending a valley first a few cases of goître will be noticed, then more, and lower down frequent cases of goître mixed with crétinism.[3] It is said, says Sir Thomas Watson, that a couple of generations of goîtreux are sufficient to produce crétinism in the third generation. Suspicion for a long time pointed to the drinking water as a source of goître ; and further and wide investigations as to the nature of the soil

[1] Waitz and Gerland, *Anthropologie*, vi. 141 ; Gerland, *Aussterben der Naturvölker*.

[2] Devay, *Du Danger*, etc. pp. 7, 8, 110; and *Un Mot sur le Danger*, etc. p. 25.

[3] St. Lager, *Études sur les Causes du Crétinisme*, etc. pp. 22, 23, 25.

over or through which these waters ran, chiefly undertaken by M'Clelland, induced Sir Thomas Watson to ascribe their disastrous effects to lime rocks.[1] Dr. St. Lager, as the result of his researches, declares that the most constant mineral in those regions where goître and crétinism are common is iron pyrites, whose presence is betrayed by crystals of sulphate of calcium in calcareous rocks, by sulphate of magnesium in dolomite, and by sulphate of iron and aluminium in other rocks. Second in frequency, he found copper pyrites, and the double sulphate of copper and iron.[2] Professor Lebour, of Newcastle, endorses these conclusions, with the exception that he considers the presence of lime with the metals necessary.[3] On the other hand, Dr. Robinson points out that iron is nearly everywhere present in the soil, nor will it produce goître when administered, nor will absence of lime prevent it, for goître occurs in the weald.[4] Professor Klebs ascribes it to the presence of minute infusoria, found, he says, in the goîtrous waters of Bavaria, Austria, and Switzerland, and which when introduced into the waters of other places where the disease has not before existed will produce it ;[5] but I am not aware that this assertion has been further proved. Whatever may be the particular poison, it is certain that drinking water is its vehicle. In goîtrous districts horses, dogs, pigs, sheep, goats, and other animals may also suffer from this disease.[6] That strangers may get it by drinking the water, and that natives may in time free themselves of it by avoiding the water, is a matter of common experience. After different drinking water had been laid on at Bozel, in the valley of Doron, Tarentaise, no more crétins were born in those families who exclusively used the new water, notwithstanding that before, in a community of only 1,472 persons, there were 900 goîtreux and 109 crétins ; and only in those parts where the

[1] Sir Thomas Watson, *Lectures on the Principles and Practice of Physic*, i. 831.
[2] St. Lager, *Études sur les Causes du Crétinisme*, p. 444.
[3] Lebour, reported in *Nature*, xxiv. 264.
[4] Robinson, *Endemic Goître*, pp. 42, 45. London, 1885.
[5] Klebs, in a paper 'On the Transformations of the Human Race,' read at the meeting of the Swiss Scientific Association at Freiburg, of which an abstract is given in *Nature*, xxix. 508.
[6] Robinson, *Endemic Goître*, p. 50.

people were still obliged to drink the old waters did new cases of goître and crétinism occur.[1]

To those who urge that the people should cross as a means to wipe out crétinism, Dr. St. Lager observes: 'I have seen, and whoever has visited crétinous countries has seen, as I have, strong and healthy girls, who have been forced by poverty to marriages of this sort, give birth to hideous crétins.' Lombroso asserts that this disease is deplorably frequent at Artogne, the only village of the valley of Camonica where it is customary to seek wives from abroad, and 'every one assured him, with one voice, that those families were most affected with crétinism who were most accustomed to intermarry with strangers.' M. Billiet observes that at St.-Alban and St.-Georges-des-Hurtières, which are the principal foci of endemic crétinism in Maurienne, it has long been customary to seek healthy wives from the opposite side of the mountains; but that these soon get goîtres, and their children are often crétins. And Fabre de Meironnes says that in the commune of Condamine-Châtelard, Basses-Alpes, although it is customary to intermarry with the neighbouring population of Meyronnes, l'Arche, and St. Paul, where there are no crétins and but few goîtreux, the people are nevertheless very subject to madness, idiocy, and crétinism. Dr. Trombotto indeed heard that the Valaisans accuse their intermarriages with the inhabitants of the valley of Aosta, and these their intermarriages with the Valaisans, of engendering crétinism amongst them. Lombroso further adds that the people of Quistello, Mantua, where crétinism is unknown, all belong to the same family, the Valvassini;[2] indeed this kind of evidence is given in abundance in the preceding chapter. As far as statistics go concerning consanguineous marriages in Valais, Maurienne, Tarentaise, and Aosta, they point to the paradoxical conclusion that mixed marriages produce more crétins than do others; and for this reason: in healthy districts the young men are not obliged to go out of their village to seek health and beauty in a wife; moreover the

[1] St. Lager, *Études sur les Causes du Crétinisme*, etc. pp. 197, 198.
[2] *Ibid.* pp. 110, 111, 115.

healthiest population live on the higher Alps, and are rather isolated; but the population lower down, where the water has had more time to linger among the rocks, are less healthy, and here it is easier to contract mixed marriages, because, as a rule, the ground is not so difficult, and intercommunication is consequently easier.[1]

It is not a little remarkable that the greatest proportion of idiots and deaf-mutes is found precisely where are the greatest number of goîtreux. The four following States of North America—

	Idiots.	Deaf-mutes.
State of New York	1,739	1,307
Pennsylvania.	1,448	1,004
Ohio	1,399	947
Virginia	1,285	711

are precisely those where goître is commonest. Florida is credited with only thirty-seven idiots, and this State is entirely free from goître.[2] This connection of deaf-mutism with goître is well worthy of further investigation, and may explain M. de Watteville's observation that there are about half as many deaf-mutes again in the mountainous parts of France compared with those in the plain;[3] and M. Chazarain also noticed that where deaf-mutes were commonest, there also were most crétins;[4] an observation to the same effect was also made by M. Menière.[5]

Crétinism has often been mistaken for idiocy, but the two are essentially different, as may be seen from the following comparison:—

Crétinism.	Idiocy.
I. It is endemic in particular parts.	I. Spread indiscriminately all over the world.
II. There is an arrest of development which affects the whole system.	II. Arrest of development as a rule only affects the head.
III. The greater number of crétins are deformed, stunted, and hideous.	III. Many idiots are perfectly well formed.

[1] St. Lager, *Études sur les Causes du Crétinisme*, etc. p. 116.
[2] *Ibid.* p. 26. [3] Chipault, *Études sur les Mar.* etc. p. 84.
[4] Chazarain, *Du Mariage, etc. comme Cause de Dégénérescence*, etc. 1859, p. 31.
[5] *Gaz. Méd. de Paris*, 1856, xi. 304.

Crétinism.	Idiocy.
IV. Over two-thirds of the crétins also have goîtres.	IV. Neither idiots themselves nor their immediate ancestors have goîtres.
V. The teeth appear late, are irregular, and decay prematurely. A premature ossification of the cranial sutures (except in cases of hydrocephalus). Occasional ossification of the cartilages. A malformed, narrow, *foramen magnum*. The cerebral hemispheres are not symmetrical; and some parts of the cerebral substance are thickened.	V. Various injuries.
VI. The sole cause is the nature of the soil through which the drinking water percolates. [? Or, rather, the nature of the drinking water.]	VI. Multiple causes:— *Congenital Idiocy* is caused by the vices of the parents: drunkenness, senility, accidents, and inheritance. *Acquired Idiocy* is due to different diseases; such as convulsions, epilepsy, typhoid fever, drunkenness, etc.[1]

The causes of idiocy are not sharply defined; they are multiple and obscure, and it has been found convenient, therefore, to shift the responsibility of its production upon the broad shoulders of consanguineous marriage. The sources of every congenital disease must be looked for in the pathological history of the family, in the state of both parents before the conception, in the history and health of the mother during gestation, and in the accidents of birth. Now, Dr. Carpenter believes that a continued state of anxiety and nervous shocks during gestation may cause idiocy in the offspring. Thus, at the siege of Landau, in the year 1793, in addition to a violent cannonading, which kept the women in a constant state of alarm, the arsenal blew up with a terrific explosion, which few could hear with unshaken nerves. Out of ninety-two children born in that district within a few months afterwards, sixteen died at the instant of birth; thirty-three languished for from eight to ten months, and then died; eight became idiots, and died before the age of five years; and two came into the world with numerous fractures of the bones of the limbs, probably caused by irregular uterine

[1] St. Lager, *Études sur les Causes du Crétinisme*, etc. p. 10.

contractions.[1] It may be caused during parturition, by a bungling midwife, or the use of surgical instruments,[2] though this is rare. The argument that long-continued pressure on the brain practised by some savages does not produce idiocy does not apply here, since that pressure is gradual. But that there is a danger to first-born children, especially to males, who have larger heads, is incontestable. Dr. Ireland has collected considerable evidence of this in his able and exhaustive work.[3] It seems to be connected with immaturity or senility of the mother, for Dr. Mitchell found that out of 443 idiots he examined, 138 were first-born, or 31·1 per cent.; eighty-nine were the last birth, or 20·1 per cent.; making in all 227 idiots, out of 443, who were born at the extremes of married life, or more than half.[4] Now, about every sixth idiot is illegitimate in Scotland, and these, as a rule, are either first-born or last-born:[5] hence Dr. Mitchell collected eighty-five cases of idiocy where the subjects were all born in wedlock, and all congenital cases, although he excluded all in whose family there was more than one case of idiocy, and all whose mother was not already beyond the age of childbearing when the inquiry was instituted; with the result of confirming his previous theory, that the children born at the extremes of married life are more likely to be idiots than are others.[6]

The effect of the habitual abuse of alcohol by parents is unfortunately only too evidently a cause of idiocy in the offspring. Dr. Elam states that on the removal of the spirit duty in Norway insanity increased 50 per cent., and congenital

[1] Carpenter, *Human Physiology*, p. 864; see also *Reynolds' System of Medicine*, ii. 38; and the *Census Report of* 1871 *on the Status of Disease in Ireland.*

[2] Down, *London Hospital Reports*, iii. 233, 234.

[3] Ireland, *On Idiocy and Imbecility*, pp. 203–211.

[4] This is confirmed by the *Census Report of* 1871 *on the Status of Disease in Ireland*; for in 1,216 cases out of 3,087 of deaf-mutism, the deaf-mute was the first birth, the last birth, or both.

[5] Dr. Howe says that many idiots have become so by attempts at abortion, and these are usually made when the child is illegitimate (*Journal of Psych. Med.*, July 1858, pp. 394, 395). M. Périer also considers that there are a greater proportion of malformed children among foundlings than among other classes; and Morel seems to be of the same opinion. In the years 1865–1866, 22 per cent. of the bastards were rejected from the conscripts for want of height; 33 per cent. of the foundlings; and only 16 per cent. of the legitimate children (see *Mém. de la Soc. d'Anthrop. de Paris*, 1870, iii. 217, 218).

[6] *Loc. cit.* Duncan, *Fecundity*, etc. pp. 392, 393, note.

idiocy by 150 per cent.[1] Dr. Lannurien, of the establishment for mental diseases at Morlaix, in Bretagne, says, 'I do not hesitate to attribute the greater number of cases of idiocy in this establishment to that cause.'[2] Dr. Ruez noticed that idiocy was very common among the miners of Westphalia, who, living apart from their wives, only came home, and generally got drunk, on their holidays; and M. Devay says that Morel also observed the same results elsewhere from the same cause.[3] Dr. Delasiauve instances the village of Carême, whose riches were its vineyards, the inhabitants of which place were forced to be a little more sober in consequence of ten years' vine-disease. This, he says, had a sensible effect in diminishing the cases of idiocy.[4] From an inspection of the Report of the Commissioners appointed by the Legislature of Massachusetts in 1846, to inquire into the condition of the idiots of that State, Dr. Howe finds that out of 359 cases in which the parentage could be ascertained, 99 were the children of notorious and habitual drunkards. By pretty careful inquiry as to the number of idiots of the lowest class derived from parents known to be temperate in their habits, it was found that not one-quarter was so derived.[5]

Nor does the evil influence of drunkenness end here. Demeaux assured himself that of 36 epileptic patients he had had under his observation during twelve years, and whose history he was able to trace, 5 were conceived in drunkenness. He observed two children of the same family suffering under congenital paraplegia, whose conception also took place while the father was drunk. A youth tainted with insanity and an idiot five years of age were engendered under the same circumstances.[6] Dr. Maudsley assures us that insanity, epilepsy, hysteria, syphilis, tuberculosis, alcoholism, and even neuralgia in the parent predisposes the offspring in many

[1] Elam, *A Physician's Problems*, p. 84.
[2] St. Lager, *Études sur les Causes du Crétinisme*, etc. p. 114.
[3] Devay, *Du Danger*, etc. pp. 11, 12.
[4] Devay, *ibid.* p. 111. M. Devay says *crétinisme*, but he is probably mistaken.
[5] Howe, 'On the Causes of Idiocy,' in the *Journal of Psych.* etc. July 1858, p. 388.
[6] Devay, *Du Danger*, etc. p. 10.

cases to insanity. Alcoholism is also induced by these diseases; a tendency to alcoholism is also inherited; and thus they act and react on each other. 'Perhaps the most frequent causes of an arrest of mental development are those which operate after birth up to the third or fourth year: they are epilepsy, the acute exanthemata, perhaps syphilis, and certainly conditions of bad nutrition, such as are produced by overcrowding, dirt, and want,' to which may be added hydrocephalus, convulsions, and their causes.[1] As to the question whether epilepsy is hereditary, Moreau concludes that it is; Tissot thinks cases of inheritance exceptional, and in this he is supported by Gintrac; Beau found in 232 cases which he examined, 22 cases which were inherited; and Delasiauve found in 133 cases, 13 inherited, since 3 had mothers who were epileptic, 1 had a brother and 1 an aunt thus affected, while in 8 other cases 2 had uncles who were idiots, 1 a brother an idiot, 1 a mother subject to convulsions, 1 a brother subject to convulsions, 2 had mothers who were hysterical, and 1 an aunt who was insane.[2] Out of 95 cases of epilepsy enumerated in the Irish Census Report for 1871, 19 were said to be inherited.[3] Dr. Reynolds says the 'large majority of cases owe their malady to other causes than inherited tendency, a certain number of those whose parents exhibit a like affection to their own may have become morbid independently of hereditary taint. It is well known that many of the children of epileptic parentage are free from the disease, and it is quite clear that many epileptics, descended from epileptic stock, have been exposed to causes of the malady which would, of themselves, have been held sufficient to have produced the malady independently of any constitutional taint.' He considers that perhaps one-third of the cases may be hereditary; of other causes there were in 63 cases, 29 due to fright, grief, or overwork; 16 to irritation, such as indigestion, dentition, dysentery, venereal excesses, etc.; 9 to general organic changes, such as fatigue, pregnancy,

[1] *Reynolds' System of Medicine*, ii. 12, 15, 37, 38, 164.
[2] Chipault, *Études sur les Mar.* etc. p. 15.
[3] *Report of the Census Commissioners on the Status of Disease in Ireland*, 1871, p. 77.

rheumatic fever, and acute diseases; and 9 to accidental hurts, such as blows, cuts, etc. In about half of these cases convulsions had occurred in infancy; and it is extremely probable that convulsions from the organic lesions of the brain which they often indicate are frequently followed by idiocy and epilepsy.[1]

Indeed, since the abuse of alcohol is a fruitful source of degeneracy in the parent, we should suspect that it also frequently led to degeneracy in the offspring;[2] and since any cause such as syphilis, alcoholism, or other diseases or habits of the parents tending to weaken them are apt to produce an arrest of mental development in the offspring, since most of these causes are hidden to all but the parents, and sometimes doubtless are ignored even by them; since, moreover, an idiotic child may thus be born from apparently healthy parents, and even in many cases from really healthy parents, quite irrespective of any consanguinity between them, it behoves us to be especially cautious how we accept the evidence tendered to us by those who advocate the theory that marriages between near kin lead to degeneracy in the offspring.

Now Dr. Voisin states, as the result of a careful examination of 1,077 of his patients at Bicêtre and Salpêtrière, that in no one instance could healthy consanguinity be regarded as a cause of idiocy, epilepsy, or insanity;[3] yet Dr. Howe evidently considers his case proved when he says that he found, among 359 idiots, 17 who were known to be the produce of such marriages, and thinks that from collateral evidence 3 more cases should be added, making in all 20 out of the 359 whose parents were related. I do not quite understand what he means here, for he goes on to say, 'The

[1] *Reynolds' System of Medicine*, ii. 294, 295, 297, 298, 262, 263.

[2] Dr. Ireland, indeed, is not inclined to attribute much idiocy to the influence of intemperance in the parents. 'I am inclined to think,' he says, 'that a strict observer, speaking from a fair knowledge of drunkards, would hesitate to say that any considerable number of their children were idiots' (*Idiocy and Imbecility*, p. 28). But if Dr. Elam's statistics as to Norway, taken from Dr. Magnus Huss' *Ueber die endemischen Krankheiten Schwedens*, are trustworthy, it is difficult to avoid the conclusion that an increase in congenital idiocy of 150 per cent. in ten years is directly due to intemperance, and not only mediately through a neurotic degeneration. [3] *Loc. cit. Medical Times and Gazette*, Oct. 10, 1868, p. 436.

statistics of the 17 families, the heads of which, being blood relatives, intermarried, tells a fearful tale. Most of the parents were intemperate or scrofulous ; some were both the one and the other ; of course, there were other causes to increase chances of infirm offspring, besides that of intermarriage. There were born unto them 95 children, of whom 44 were idiotic, 12 others were scrofulous and puny, 1 was deaf, and 1 was a dwarf! In some cases all the children were either idiotic or very scrofulous and puny. In one family of 8 children 5 were idiotic.'[1] From which I presume that each of the 17 families had one representative idiot in some institution from which the returns were culled. Hence, dismissing the first comparison, we find that among 95 children, the produce of 17 consanguineous marriages, 44 were idiots, or nearly half. Dr. Mitchell examined every case of idiocy in nine counties of Scotland, namely, Aberdeen, Bute, Clackmannan, Fife, Kincardine, Kinross, Perth, Ross and Cromarty, and Wigtown, with the following result :—

Whole number of idiots and imbeciles examined		711
Of these were illegitimate	108	
,, parents unknown	84	
Total	192	
Total number whose parentage was known		519
Of these the parents were related in cases numbering		98
,, ,, not related ,, ,,		421
Of the 98 idiots whose parents were related :—		
The parents were first-cousins in 42 cases.		
,, ,, second ,, 35 ,,		
,, ,, third ,, 21 ,,		

He also gives an analysis of fifty-nine cases where he found that more than one child in the same family was an idiot, but with this we have nothing to do here, as such cases do not represent the whole. Taking then the idiots born in wedlock whose parentage was known, on a total of 519 we have ninety-eight who were born in consanguineous marriage up to the eighth degree, or 18·1 per cent.[2] Dr. Down, on the other hand, found that on a total of 852 idiots, from which all cases in which an element was doubtful have been excluded,

[1] Howe, *Journal of Psych.* etc. July 1858, pp. 393, 394.
[2] Mitchell, *Mem. read before the Anthrop. Soc. of London*, 1866, ii. 414-417.

sixty were the produce of consanguineous marriages up to the eighth degree, thus :—

The parents were first-cousins in 46 cases.
,, ,, second ,, 6 ,,
,, ,, third ,, 8 ,,

Of the marriages between first-cousins, two were a little more nearly related, the parents of these cases being themselves the issue of consanguineous marriages.[1] Dr. Down therefore derives seven idiots in every hundred from consanguineous marriages. Dr. Bemiss found among 192 children, born from thirty-four consanguineous marriages, in all four idiots, or only 2 per cent.[2] And on a total of 833 consanguineous marriages he found 7·8 per cent. of the children were idiots ; while on a total of 125 marriages between persons in no way related by blood he found 0·7 per cent. of the children were idiots.[3] Yet, notwithstanding these facts, and the difficulty which he acknowledges there is in obtaining an insight into the parentage of patients in asylums, he asserts that he feels he is authorised to assume that 15 per cent. of the idiots in the United States asylums are of consanguineous parentage![4]

Dr. Ireland found among 204 families which had produced idiot children, nine marriages between cousins, or 4·4 per cent. ; of which seven were between first-cousins, and two between second-cousins. In six of the marriages between first-cousins forty-two children were born, and in one the number was not given. The two marriages between second-cousins produced seventeen children. Hence eight consanguineous marriages produced fifty-nine children, or an average of 7·4 nearly per marriage. In one of these eight families Dr. Ireland suspected other members were idiotic, and assuming that there were three idiots in this family, we shall have a total of eighteen idiots of consanguineous origin as compared with

[1] Down, *London Hospital Reports*, 1866, iii. 225. He has evidently made a mistake in the total number of male idiots from which he takes the number of those born from consanguineous unions—having taken the total of those where the doubtful cases have not been eliminated, while he takes the right total of the females. I have ventured to correct this from the context.

[2] Dr. Bemiss says *191* children on one page, and *192* children on the next (*Journal of Psych. Med. and Ment. Path.* April 1857, p. 370).

[3] Bemiss, *Trans. of the Amer. Med. Assoc.* for 1858, xi. 420-423 See also the Appendix to this work.

[4] Bemiss, *ibid.* p. 330.

195, at one per marriage, of non-consanguineous origin, or 8·5 per cent.[1] In answer to Mr. G. H. Darwin's circular, Dr. Grabham, of Earlswood, inquired of the parents of 1,388 patients whether they were first-cousins,[2] and found that fifty-three patients were so derived, or 3·8 per cent. The commissioners appointed to report on idiocy to the General Assembly of Connecticut, in the year 1856, found that of 160 cases in which the question was answered whether there was any relationship between the parents of the idiot in question, twenty were found to be so related, or 12·5 per cent.[3]

Now let us compare the results of these observations:—

Observers	Total Number of Idiots examined	Total Number derived from Consanguineous Marriages	Percentage
Grabham . .	1388	53	3·8
Howe . . .	359	17 (or 20)	4·7 (or 5·5)
Down . . .	852	60	7·0
Ireland . .	213	18	8·5
Commission of Connecticut . .	160	20	12·5
Bemiss . . .	'from researches'		15·0
Mitchell . .	519	98	18·1

We see fluctuations here between 3·8 and 18 per cent.; a difference which points conclusively to the fact that these statistics are entirely worthless. Indeed, the disturbing causes are so many that a few hundred cases like these cannot rise above them. When governments see the force of making these returns compulsory in the census; when this is carried out with a due regard to other questions necessary to elucidate the matter, and when we thus have returns by the million, so that a false report or two on either side may be but as a drop in the ocean—then, and not till then, can we venture to deduce conclusions with safety from observations of this kind.

Of thirty-five cases of insanity and idiocy reported on by Dr. Mitchell, in the island of Lewis, there were born—

[1] Ireland, *On Idiocy and Imbecility*, p. 22.

[2] G. H. Darwin, 'Marriages between First-cousins,' in the *Journal of the Stat. Soc.* xxxviii. 166.

[3] Mitchell, *Mem. read before the Anthropological Society of London*, 1866, ii. 420, 421; Bemiss, *Trans. of the Amer. Med. Assoc.* for 1858, xi. 331.

Of parents known not to be related		16
Of parents known to be related :—		
First-cousins	2	
Second ,,	3	
More distant relatives	6	
The issue of cousins	1	12
Of parents concerning whom nothing was known (this includes illegitimates)		7
	Total	35

Also, on a total of 260 cases reported on from the counties of Ross and Cromarty, and Wigtown, Dr. Mitchell obtained information concerning the parentage of 177, of which 41 were born from marriages between relations. Of these 41, 37 were idiots, and 4 laboured under acquired insanity. Of the remaining 136 not descended from consanguineous marriages, 101 were idiots, and 35 laboured under acquired insanity.[1]

Far more reliable are the statistics obtained by Mr. G. H. Darwin in reply to his circulars :—[2]

Asylum	Doctors	No. of Patients	No. of Answers	No. derived from first-cousins	Per cent.	Remarks
West Riding, Wakefield	Crichton Browne	1407	655	31	4·7	Includes some idiots
Hanwell	Rayner	380	255	2 or 3	0·7 to 1·2	Also 12 cases of doubtful consanguinity
Warneford, Oxford	Byewater Ward	59	20	none	0	
Mickleover, Derby	Murray Lindsay	364	198	4	2	
Caterham	Adam	1906	560	20	3·5	
Glamorgan	Yellowlees	492	218	9	4·1	
Chester	Lawrence	450	225	3	1·3	
Nottingham	Phillimore	390	200	4 to 9	2 to 4·5	
Grove Hall, Bow	Mickle	427	181	8	4·4	
Hatton, Warwick	Woods	537	258	8 or 9	3·1 to 3·5	
Montrose	Howden	406	141	8	5·7	
Crichton, Dumfries	Gilchrist	146	51	4	7·8	
Southern Counties, Dumfries	Anderson	318	200	8	4	
Murray, Perth	Lauder Lindsay	80	44	4	9	
Perth District	McIntosh	229	78	3	3·8	
	Total	7,591	3,284	116 to 123	3·5 to 3·7	

[1] Mitchell, *Mem. read before the Anthropological Society of London*, 1866, ii. 418, 433.

[2] G. H. Darwin, 'On Marriages between First-cousins,' in the *Journal of the Stat. Soc.* xxxviii. 166.

In the island of Lewis, therefore, 42·7 per cent. of the cases of insanity were derived from consanguineous marriages; and in Ross, Cromarty, and Wigtown, there were nearly 23·2 per cent. These figures, as might be expected, do not agree, for microscopic statistics always leave too much to chance. In Mr. Darwin's statistics 3·8 per cent. only are so derived, and we have reason to believe that at least this number is the proportion of first-cousin marriages to others, while we know further that first-cousin marriages produce more offspring than do others; and hence if 3·8 is the percentage of insanity from these marriages, that disease is less likely to occur when cousins marry than when strangers marry.

Chorea, another alleged result of consanguineous marriages, is brought on by anything that makes a person what is called 'nervous'—by inheritance, therefore, of a tendency to epilepsy, paralysis, hysteria, insanity, etc.; or it may be caused by fright or irritation, such as dentition, worms, etc.; and it is nearly always combined with cardiac disease, which is, in its turn, induced by rheumatism. Of 104 cases of chorea examined, fifteen only were free from cardiac murmur and had not suffered previously from rheumatism. It follows, therefore, that a rheumatic diathesis, when inherited, may be numbered among the causes of chorea, just as it may, also, of epilepsy.[1] The statistics adduced [2] to prove the orlgin of this disease in consanguineous marriage are disproved in the refutation of other statistics of the same class.

M. Chazarain has attempted to show that these marriages tend to the production of deaf-mutism in the offspring; [3] and in France MM. Boudin, Devay, and Chipault have caught up and enlarged upon the theory; it has been specially investigated in the United States of America; and, after being the subject of much desultory inquiry in Great Britain, it is gradually getting to be a subject of official

[1] *Reynolds' System of Medicine*, ii. 189, 198–201, 206, 207, 221.
[2] See Appendix to this work.
[3] Chazarain, *Du Mariage entre Cons. considéré comme Cause de Dégén. Org. et plus particulièrement de Surdi-mutité Congénitale.*

investigation by means of the census. It behoves us, however, before we compare the results of all these inquiries, to examine as far as possible what other causes may produce congenital deaf-mutism, in order that we may eliminate disturbing factors from our problem, and start as nearly as possible on clear ground, just as we have already done in our inquiries on insanity and on goître. Now, these various causes are tabulated in the Irish Reports,[1] from which it appears that, whatever the immediate, the remote cause of congenital deaf-mutism must lie in the transmission of nervous disease, and must therefore be looked for primarily in the general causes of nervous disease, and secondarily in accidental causes. This nervous disease may affect both the tongue or the ear, or the one organ alone, and may be inherited in such a variety of ways that we may well despair of ever ascertaining, without the help of a general census, how consanguinity of the parents affects it. For it may be caused by hydrocephalus, chorea, convulsions, paralysis, or epilepsy directly, and by the causes of these and of other nervous affections indirectly: we have seen that deaf-mutism is influenced probably, as idiocy, by the position in the family of the child, whether a first or last birth, or the only child; it is also caused by an inherited tendency to inflammation of the lining membrane of the ear, with a gouty, rheumatic, or scrofulous constitution; by amaurosis of the nerve from inherited syphilis; or it may be caused in a variety of ways so soon after birth that it is impossible to say whether the disease was congenital or not. It may very likely be sometimes caused by drinking goîtrous waters,[2] and is certainly hereditary like other chronic diseases.[3]

Seeing, then, that trustworthy statistics are wanting, we should expect the question to remain in abeyance until there

[1] *Census of Ireland, Status of Disease.* [2] See p. 204 of this work.

[3] *Reynolds' System of Medicine*, i. 740, 757; ii. 262, 263; Campbell, *Deafness and its Causes*, etc.; Pennefather, *Deafness*, etc.; and the *Census Reports on the Status of Disease in Ireland.* Dr. Graham Bell, also, calls attention to the danger of deaf-mute asylums, which, by promoting marriages between deaf-mutes, tend to create a race suffering from this defect. (Paper read at the meeting of the National Academy of Sciences at New Haven, U.S.A., 1883. Reported in *Nature*, xxix. 161.)

was some safe ground to go upon. Other men, however, have thought differently, and have asserted, as a truth, deductions from statistics which could not possibly yield the truth; and since scientific men have been found who accept these assertions, it will be my duty to point out more clearly where they are fallacious. In the first place, their method of procedure is obviously untrustworthy, for they either inquire into the parentage of as many deaf-mutes as they can find, and then compare the result with what they suppose to be the relative numbers of consanguineous and non-consanguineous marriages, or they collect as many cases of consanguineous marriage as they are able, and then analyse the result. Now, in the first place, suppose that in 400 marriages between near kin, 200 produced two deaf-mutes apiece; and that 400 marriages between persons not related produced each one deaf-mute; we should say that all the non-consanguineous marriages produced unhealthy offspring, while only half the consanguineous marriages turned out badly. If, however, we had all these deaf-mutes together in an asylum, and inquired into their parentage, consanguineous marriage generally would appear to produce double as many deaf-mutes as the non-consanguineous. In other words, this method of research presupposes three things to be true, all of which we have more evidence to believe untrue, to wit: that an equal proportion of deaf-mutes are born to each consanguineous as to each non-consanguineous marriage; that an institution (generally charitable) is a true mirror of the state of deaf-mutism in the general population;[1] and, thirdly, that we know the proportion of consanguineous marriages to the non-consanguineous, which I have already shown that we do not. The uncertainty of any one of these premises is sufficient to damn any conclusion based on the whole. The uncertainty of all three premises makes the worthlessness of the deductions overwhelmingly decisive. The second method of research—by the collection of cases of consanguineous marriage—I have shown in the

[1] The fallacy of which is strikingly exemplified in the seventeen cases of idiocy reported by Dr. Howe (see p. 210 of this work), and in the facts concerning the number of Jews in the Deaf-mute Asylum at Paris (see p. 180 of this work).

Appendix to be utterly untrustworthy, except as a proof of the harmlessness of these marriages; because there is a greater likelihood that more than the natural proportion of consanguineous marriages which have turned out badly will be noticed.

But let us see what has been done. M. Boudin says he examined the books of the Imperial Institution for Deaf-mutes at Paris. At the time of his visit, which occurred in January 1862, there were 200 deaf-mutes, of which ninety-five were congenital cases; but the parentage of sixty-seven only was satisfactorily ascertained. The parents of forty-eight of these sixty-seven were not related, while the remaining nineteen were derived from marriages between relatives, or 28·35 per cent. were of consanguineous origin. Hence, he argues, there were fourteen times as many deaf-mutes of consanguineous origin as there should have been were these marriages as harmless as others;[1] because he values these marriages at 2 per cent. of all marriages; a figure which, as we have seen, is founded on mere guesswork. M. Dally went to the same institution, but, instead of restricting himself to the deaf-mutes then present in the asylum, he carefully analysed the records of all the cases which had passed through that institution, with the following result: out of 315 cases, 124 were congenital, of which eighteen only were derived from consanguineous marriages; thus—

Derived from marriages between first-cousins[2] . . .	6
From second-cousins and others up to the seventh degree .	11
From marriage between aunt and nephew	1

Nor, perhaps, were all these eighteen cases really derived from consanguineous marriages, for four of them were only supposed to be so from the similarity of the parents' names. Dropping, therefore, these four from our calculations, we have a total of fourteen deaf-mutes, half of whom were born from parents very distantly related, and the other half from parents who can really be considered as related, on a total of 120 cases; or 11·7 per cent. if we count the distant relationship,

[1] Boudin, *Ann. d'Hygiène*, xviii. 8 10.

[2] Of these one has a relation of the mother's also deaf-mute; another has a

and 5·8 per cent. if we only count the nearer. Now M. Dally, with quite as much authority as M. Boudin, estimates the proportion of marriages between first-cousins alone at figures varying between 1·4 in a division of Paris where the population is constantly shifting, to 8 per cent. in some provinces where the population is stationary.[1] From which it follows that the number of deaf-mutes derived from consanguineous marriages, which chance has sent to the institution at Paris, is not out of proportion to the estimated number of consanguineous marriages, as compared with the non-consanguineous. M. Ladreit de Lacharrière of the institute found that out of 107 congenital deaf-mutes who had entered that asylum since 1867, seventeen were born from consanguineous marriages :—[2]

Derived from marriages between first-cousins	7
From marriages between second-cousins	6
From marriages between third-cousins	2
From marriages between fourth-cousins	2

Or an average of 15·89 per cent.

M. Boudin further cites M. Landes, to the effect that in the Asylum for Deaf-mutes at Bordeaux there were twenty-four congenital deaf-mutes on a total of seventy-nine, who were derived from marriages between near kin.[3] But M. Dally points out that the number twenty-four refers not to the deaf-mutes, but to their families. On a total of 287 families, who had sent deaf-mutes to the asylum between the years 1839–1859, the parents were related, in twenty-four cases, up to a distance of the sixth degree, or in the proportion of about 8·4 per cent., which ought to be reduced if we only take into account marriages between first-cousins and nearer relatives.[4] M. Boudin also cites a report from M. Chazarain, that at the asylum at Bordeaux, on a total of sixty-six congenital deaf-mutes, fifteen were derived from consanguineous marriages, and these fifteen had among them twelve brothers and sisters,

first-cousin of the father deaf; in another case the mother had her first child when she had attained the age of thirty-four years ; and in another the mother was ill during gestation (Dally, *Recherches sur les Mar. Cons.* pp. 24, 25).

[1] Dally, *ibid.*

[2] Lacassagne, *Dict. Encycl. des Sciences Médicales*, xix. 698, 699. Paris. 1877.

[3] Boudin, *Ann. d'Hygiène*, xviii. 9.

[4] Dally, *Recherches*, etc. pp. 26, 27.

who were also deaf-mutes, but who were not in the asylum. Of fifty deaf-mutes, out of fifty-one not derived from consanguineous marriages, eight each had one brother or sister, and one had three brothers or sisters also deaf-mutes.[1] Hence, if there be no confusion between this account and that of M. Landes, we have a percentage of 30·4 deaf-mutes of consanguineous parentage. The exact relationship is not stated; but judging from eighteen cases, of which a detailed account is given, M. Chazarain seems to allow himself a very wide scope.[2] According to the report furnished to the Foreign Office in the year 1886, there were then fourteen cases of deaf-mutism of consanguineous origin on a total of 194, congenital and non-congenital, or only 7·2 per cent.;[3] while in the year 1878 the director informed M. La Perre that only six out of 173 inmates were derived from consanguineous marriages, or 3·5 per cent.[4]

Concerning M. Boudin's statement that Piroux found 21 per cent. of the deaf-mutes at the asylum of Nancy were the offspring of consanguineous marriages, M. Dally adds: 'I had the pleasure of speaking to M. Piroux last year on the subject of his remarkable institution at Nancy. At that time M. Piroux had made no inquiries, and could give no information about the question I was studying. Since then M. Piroux has published a statement which referred to 612 cases of deaf-mutism received at his establishment from 1828 to 1863. He arrived at his conclusions by retrospective inquiries, comprising in them the most distant degrees of relationship, and obtained fifteen or seventeen per cent. as a maximum. Why then does M. Boudin speak of 21 per cent.? But if we take from M. Piroux's returns the relations beyond first cousins, we only find, in thirty-five years, forty-two who owe their origin to parents who are related, or a little more than 6 per cent., the number at which we can approximately value

[1] Chazarain, *Du Mariage entre Cons.* etc. p. 34; Devay, *Du Danger*, etc. pp. 122, 123; Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 509.

[2] See Chazarain, *Du Mariage entre Cons.* p. 36, where he describes the relationship in one case as *assez éloigné*. The 18 cases are given in full in the Appendix to this work. (Cases Nos. 30 to 48.)

[3] *Papers Respecting Deaf-mutes. Miscellaneous.* No. 1, 1886, pp. 6, 7.

[4] La Perre de Roo, *La Consanguinité*, p. 169.

the marriages between these relations for all France.'[1] 'I begged Dr. Jantet,' continues M. Dally, referring to a further statement of M. Boudin's that Dr. Perrin found at Lyons 25 per cent. of the deaf-mutes resulted from these marriages[2]— 'I begged Dr. Jantet, a distinguished physician of that town, to ask him about the statements mentioned in M. Devay's book, and quoted in M. Boudin's essay. Now here is M. Perrin's answer: "I have never made any enquiry on the subject of deaf-mutism caused by consanguineous marriages. There were merely some verbal data which I gave to M. Devay. I can hardly remember the fact myself. Besides, no register of this establishment will show whether cases of deaf-mutism result from consanguineous marriages or not."'[3] In answer to M. La Perre's inquiry, M. Touestier, the director, reported four deaf-mutes out of eighty-six inmates were derived from marriages between first-cousins, or 4·6 per cent.[4] The report furnished to the Foreign Office gives the number of inmates as ten and the percentage of these derived from consanguineous marriages as eighteen, which must therefore be an average.[5]

During a space of fifteen years, according to M. Brochard, physician to the asylum at Nogent-le-Rotrou, there have been fifty-five cases of congenital deaf-mutism under his care. Of these fifty-five there were fifteen children of first-cousins, and one child of second-cousins, or a total of sixteen children born from near kin out of fifty-five, which makes 29 per cent.[6]

M. Lefebvre, director of the institute at Rouen, found two deaf-mutes among eighty inmates of that place were derived from marriages between near kin, or 2·5 per cent.[7]

M. Ehain, director of the institute at Liege, found that out of eighty-seven inmates, forty-nine were congenital deaf-mutes. Out of the whole eighty-seven, five were derived from consanguineous marriages, or 5·7 per cent. on the congenital and non-congenital cases together.[8]

[1] Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 509; Dally, *Recherches*, etc. p. 27.
[2] *Ibid.*; Devay, *Du Danger*, etc. pp. 123, 124.
[3] Dally, *ut sup.* [4] La Perre, *La Consanguinité*, p. 166.
[5] *Papers Respecting Deaf-mutes. Miscellaneous.* 1866, No. 1, p. 11.
[6] Brochard, *Comptes Rendus*, 1862, lv. 43, 44.
[7] La Perre, *ut sup.* p. 164. [8] *Ibid.* pp. 160, 161.

In answer to the inquiry of the British Foreign Office, answers were received from the following institutions, in addition to those already cited;[1] but, owing to the careless way in which the returns are made, many of these numbers are only estimates :—

Locality of institution	Number of inmates congenital and non-congenital	Percentage of consanguineous origin
Alençon	49	25
Auray	60	0
Bourg (boys)	30	30
Bourg (girls)	30	30·4
Chambéry	90	4·5
Clermont-Ferrand	31	17·8
Rillé	49	0·8
Laval	71	2·8
Marseilles	57	7
Inst. Houdin, Paris	18	10
Poitiers	80	15
Puy	55	7·2
Rodez	43	14
St. Brieuc	90	10
St. Médard	152	25

Hence we have a pleasing variety between 0 and 30·4 per cent.

The director of the asylum for deaf-mutes at Rome sent out a circular to the parents of the inmates at M. Balley's request. Only thirty-three were answered, and of these only thirteen were congenital. Two of the thirteen resulted from consanguineous marriages, or 15·4 per cent.[2]

The Commission for Promoting the Education of Deaf-mutes of the Province of Milan sent inquiries to the parish priests as to the parentage of 306 deaf-mutes. Of these, 294 were returned as derived from parents not related to each other, one from first-cousins, and eleven from second-

[1] *Papers Respecting Deaf-mutes. Miscellaneous.* 1886, No. 1.

[2] Balley, *Gaz. Méd. de Paris*, December 5, 1863, p. 804. M. Balley says there were three, but he gives the following history of one of the three :—A certain young lady had a child before marriage, which she sent to the foundling hospital. On her subsequent marriage, she only had one child, a boy, and therefore prevailed on her husband to adopt a daughter from the foundlings. 'Comme on le *pense*,' she chose her own child, who afterwards became the wife of her half-brother, with the result of four still-born, then the deaf-mute in question, sixthly a dwarf, and seventhly an apparently healthy child, now eleven years old. But there is no proof whatever that the girl was half-sister to her husband. Indeed, nothing was known of her beyond the fact that she was 'd'une

cousins, or 3·9 per cent.[1] M. Glondy, director of the institute for deaf-mutes at Milan, found among fifty-six congenital cases only one derived from a consanguineous marriage, a marriage between first-cousins, or 1·8 per cent.[2]

In Arnold's School for Deaf-mutes at Moscow Dr. Benzengue found a total of 110 inmates in May 1878, some of which had deaf-mute brothers or sisters, making together 129 in all. These 129 were born from 110 marriages; of which three were between persons of different nationalities, and nine between persons of the priestly class, and hence twelve at least could not be consanguineous; seventy-four marriages were of the soldier, mechanic, tradesman, and peasant class, all of whom Dr. Benzengue considers could not in Russia have married a relative, seeing that a dispensation from the archbishop of the diocese, the metropolitan, and the holy synod would have to be obtained; and such a marriage, from the religion of the people, would be most improbable in central Russia. For the same reasons he cannot think that any of the remaining twenty-four marriages of the Dworiané and Tchinovonik classes (or noble and Government employé) could possibly be consanguineous; because, even had any of these people been free-thinkers, a dispensation means money, and were any of these people of means their children would not have been in the asylum. He therefore concludes that none of these 129 deaf-mutes were derived from consanguineous marriages; and, further, he considers that, were these marriages the chief cause of deaf-mutism, as alleged, Russia should be almost free from that disease.[3]

Dr. F. B. W. Hermann found in Bavaria, on a total of 2,644 deaf-mutes, that sixty-nine were born from consanguineous marriages where the parents were related in from the second to the seventh degrees; 2,227 were derived from

rare beauté'; while the father of her husband seems to have been decidedly unfertile, and of the girl's parents nothing was known. A man who condescends to an argument like this is unworthy of attention.

[1] Mattei, *Della pretesa mala influenza dei matrimoni consanguinei*. Siena, 1871, p. 12.

[2] La Perre, *La Consanguinité*, p. 163.

[3] Benzengue, 'Les Sourds-Muets de Moscou,' in the *Revue d'Anthropologie*, iii. 27 33, 2nd series, No. 1, for January 15, 1880. Paris.

marriages in which there was no relationship; and in 348 cases the relationship between the parents was unknown. Taking only the cases in which the relationship of the parents was ascertained, the proportion of deaf-mutes derived from consanguineous marriages up to the seventh, which, if reckoned by the civil law would include marriages between second-cousins once removed, and if by the canon law (as seems probable, since Bavaria is a Catholic country, and unions are spoken of between persons related in the second degree) would include fifth-cousins, and equal 3 per cent.[1]

On 370 deaf-mutes examined at Cologne by M. Lent thirteen were found to be derived from consanguineous marriages, or 3·5 per cent.[2]

M. Gunkel, of the institute for deaf-mutes at Munich, found no case derived from a consanguineous marriage among 235 deaf-mutes who had passed through his establishment during a period of fifteen years.[3]

On a total number of 107 deaf-mutes at Pesth, Dr. Bôke was able to trace the parentage of sixty, out of which sixteen were congenital cases, and not one of these derived from marriages between blood relations. Of the forty-four non-congenital cases out of the sixty whose origins were traced, twenty-four became deaf-mute from brain disease, nineteen from ear disease, and one from scarlet fever. The parentage of six of these cases was consanguineous. Taking the congenital and non-congenital cases together, in some of which the disease did not manifest itself until the fifth year, we have six out of sixty, or 10 per cent., of consanguineous origin.[4]

In the duchy of Nassau, on a total of 381 deaf-mutes, 31 were derived from 21 marriages between blood relations. Of these, 14 marriages were between first-cousins, and 7 between

[1] Quoted by Dr. A. W. Alings, 'Het Aantal Doofstommen in Nederland; vergeleken met dat in andere Landen,' in *Staatkundig en Staathuishoudkundig Jaarboekje*, 1867, No. 356, from the *Beiträge zur Statistik des Königreichs Bayern*, viii. p. 261.

[2] Lent, 'Statist. der Taubstummen Kölns,' p. 32. Cited by M. Stieda, in the *Annales de Démogr. Internat.* iii. 31.

[3] La Perre, *La Consanguinité*, p. 162.

[4] J. Körösi, *Die königliche Freistadt Pesth im Jahre* 1870, pp. 86, 87. Pesth, 1871.

persons more distantly related.[1] This gives 8·1 per cent. derived from consanguineous marriage.

In the institute for deaf mutes at Groningen the parentage of 163 congenital patients was traced out of a total of 241. Of these, 16 were found to be derived from marriages between first-cousins, and 4 from marriages between more distant blood relations. If those who were supposed to have become deaf-mute within their second year are added, then, out of 203 deaf-mutes, 22 were derived from marriages between first-cousins, and 5 from marriages between other blood relations, which would give a percentage of 12·3 in the first case, and 13·3 in the second.[2]

Dr. Freibel, director of the institute at Berlin, found one deaf-mute in his establishment, which comprised 92 inmates, derived from a consanguineous marriage; or 1·09 per cent.[3]

M. J. de Meyer, director of the institute for deaf-mutes at Antwerp, found that out of 42 inmates, 18 or 20 were congenital deaf-mutes, of which none were derived from consanguineous marriage. Of the remainder, 1 was derived from a marriage between first-cousins. That is, 2·4 per cent. on the congenital and non-congenital cases together.[4]

Dr. Bemiss found that out of 833 marriages between blood relations up to the degree of third-cousins, and including cases of incest, 3·6 per cent. of the children were deaf-mutes. He was also informed by a principal of a deaf-mute asylum that 21 out of 139 pupils, whose history had been inquired into, were known to be derived from consanguineous marriages, or 15 per cent.; and another principal of an asylum informed him that 28 out of 183 cases, or 15·3 per cent., were derived from these marriages.[5] From a late report of the Kentucky Deaf and Dumb Asylum, says Dr. Allen, 10 to 12 per cent. of the deaf-mutes are the children of cousins. He adds that it has 'been reported' that in some parts of Kentucky there has been an unusual number

[1] Alings, *ut sup.* p. 16, from the *Organ der Taubstummen- und Blinden-Anstalten in Deutschland*, x. 194.
[2] Alings, *ibid.*
[3] La Perre, *La Consanguinité*, p. 161.
[4] *Ibid.* p. 160.
[5] Bemiss, *Trans. of the Amer. Med. Assoc.* 1858, xi. 330, 420, 421.

of such marriages in certain families for several generations, thus intensifying the hereditary effect; and that a Dr. Mulligan, of Dublin, found that 100 out of 154 children born from consanguineous marriages were deaf-mutes, or 0·65 per marriage.[1]

From Halifax, Nova Scotia, Dr. J. Scott Hutton reports that the parentage of 100 out of 131 deaf-mute pupils of the school there was traced, showing 56 from 23 families to be derived from marriages in which there was previous relationship between the parents, and 44 from 31 families in which there was no relationship.[2] This gives an average of 2·4 deaf-mutes per family in the consanguineous cases, as compared with 1·4 per family in the non-consanguineous; and a percentage of 5·6 deaf-mutes derived from blood relations.

In response to the inquiry of the Foreign Office, the parentage of the pupils at four deaf-mute schools (apparently in Canada, but this is not clear) was investigated. On a total of 1,278 deaf-mutes, 1,181 from 880 families were of non-consanguineous parentage, or an average of 1·34 per family; and 97 deaf-mutes from 65 families were of consanguineous origin, or an average of 1·5 per family, and giving 7·59 per cent. of the total number. The relationship was as follows:—[3]

Relationship	Families	Deaf-mutes	Per Cent. on Total	Average per Family
Uncle and niece . . .	1	1	0·078	1·00
First-cousins . . .	45	63	4·930	1·40
Second-cousins . . .	10	19	1·485	1·90
Third-cousins . . .	7	11	0·860	1·60
Fourth-cousins . . .	2	3	0·234	1·50
No relation . . .	880	1,181	92·410	1·34

I presume the average per family is not strictly correct, for in these figures no intensification by double inheritance is to be found. The percentage of deaf-mutes from no relations is 92·41, which is pretty considerable if consanguinity be the

[1] N. Allen, *Intermarriage of Relations*, pp. 17, 18. It is a pity no references are given to his authorities.

[2] Hutton, 'Statistics of the Deaf and Dumb in the Lower Provinces of British North America,' in the *American Annals of the Deaf and Dumb*, for January 1869, No. 1, xiv. 15.

[3] *Papers Respecting Deaf-mutes. Miscellaneous.* No. 1 (1886), pp. 60, 61.

chief cause of deaf-mutism. The percentage from marriages between first-cousins is less than might be expected unless the number of such marriages is very low; while that from marriages of more distant cousins shows that the statistics come from a new country, where the population is scattered.

As for the British Isles, Mr. Buxton, principal of the Liverpool School for the Deaf and Dumb, in an inquiry he made 'from a large number of persons,' found that 'every tenth case of deafness resulted from the marriage of cousins.'[1] He gives no particulars; and in a subsequent communication to Mr. George Darwin, although he relates that 54 deaf-mutes belonged to 26 families (an average of over 2 per marriage), which tells us nothing, he still gives no details as to his other statistics.[2]

In 1862 Dr. Mitchell reported the result of the inquiries he had made of various superintendents of institutions as follows:—[3]

	No. of Pupils	No. of Families represented	No. of Pupils the Offspring of Consanguineous Marriages	No. of Families represented
I. Scotch Institutions: Glasgow, Dundee, Aberdeen, and Donaldson's Hospital . . .	201	181	12	9
II. English Institutions: Bath, Newcastle-on-Tyne, Swansea, Exeter, Doncaster, and Brighton	343	323	16	15
Total . .	544	504	28	24

This gives an average of 1·05 deaf-mute per family in the non-consanguineous cases, and 1·17 per family in the consanguineous; and a percentage of deaf-mutes, congenital and non-congenital, of consanguineous origin of 5·14 on the total.

[1] Buxton, 'An Inquiry into the Causes of Deaf-dumbness, Congenital and Acquired,' in the *Liverpool Medico-Chirurgical Journal*, for January 1859, No. 5, p. 27.

[2] G. H. Darwin, 'On Marriages between First-cousins,' in the *Journal of the Statistical Society*, June 1875, xxxviii. 171.

[3] Dr. A. Mitchell, 'Blood Relationship in Marriage,' in the *Mem. read before the Anthropological Society of London*, ii. 422, 423.

Dr. Scott found 7 marriages out of 241 which produced deaf-mute offspring were between first-cousins,[1] or 2·9 per cent.

Mr. Arthur Hopper, of the deaf and dumb school near Birmingham, from a most careful inquiry, found that of 113 pupils whose parentage was ascertained, 66 were congenitally deaf, and in 10 the cause of deafness was unknown. Not one of the whole 76 was derived from a consanguineous marriage.[2]

Of 130 pupils of the Manchester School for Deaf Mutes Mr. Patterson found 63 cases were congenital. Only one case of consanguineous marriage was found among the whole 123 marriages from which the pupils were derived, but in 8 of these whether the parents were related or not was not ascertained. Whether the one case of consanguineous marriage produced one of the 63 cases of congenital deaf-mutism is not clear; but, taking that view, we have 1·6 as the percentage.[3]

The Irish Census Commissions of 1871 and 1881 inquired into the parentage of deaf-mutes, with the following result, which I have tabulated:—[4]

Relationship	1871			1881		
	No. of Marriages	No. of Congenital Deaf-mutes	Average per Marriage	No. of Marriages	No. of Congenital Deaf-mutes	Average per Marriage
First-cousins .	85	128	1·50	84	123	1·46
Second-cousins .	63	89	1·41	40	46	1·15
Third-cousins .	32	40	1·25	10	21	2·10
Fourth-cousins .	7	11	1·57	1	1	1·00
Fifth- and sixth-cousins . .	14	19	1·35	Not stated		
Total .	201	287	1·43	135	191	1·45
No relationship .	2,804	3,216	1·14	2,452	2,972	1·21
Total	3,005	3,503	1·16	2,587	3,163	1·22

An examination of this table will show that the statistics so much relied upon as proving the causation of deaf-mutism by

[1] G. H. Darwin, 'On Marriages between First-cousins,' in the *Journal of the Stat. Soc.* xxxviii. 170. [2] *Ibid.* [3] *Ibid.*

[4] This table is obtained from tables i., x., and xi., in the *Census Report on the Status of Disease in Ireland*, 1871, pp. 20, 22. The number of congenital

consanguineous marriage show nothing of the sort. In 1871 fourth-cousins produced more deaf mutes per marriage than any nearer relationship. In 1881 third-cousins produced more than any nearer relationship. Comparing these results with those obtained in the census of 1851 and that of 1861, we have—

From the Irish Census Reports	Census of 1881	Census of 1871	Census of 1861	Census of 1851	Totals
Total number of congenital deaf-mutes derived from consanguineous marriages	195	287	362	242	1,086
Total number of congenital deaf-mutes derived from non-consanguineous marriages	2,968	3,216	4,096	3,885	14,165
Average number of congenital deaf-mutes per consanguineous marriage .	1·445	1·427	1·496	1·423	1·448
Average number of congenital deaf-mutes per non-consanguineous marriage	1·210	1·146	1·248	1·197	1·200
Percentage of congenital deaf-mutes derived from consanguineous marriages	6·165	8·192	8·120	5·863	7·085

In this table, although we do not see any tendency of consanguinity to produce deaf-mutism of itself, as the commissioners of the census say we should ;[1] yet we do see an intensification of a family tendency to deaf-mutism, in the average of 1·4 for consanguineous marriages, as compared with 1·2 for non-consanguineous marriages ; but, as I have already

deaf-mutes from consanguineous marriages is from table xi. less those who were not both deaf and dumb. The number of congenital deaf-mutes from non-consanguineous marriages is the difference of the total of congenital deaf-mutes given in table i. and those found to result from consanguineous marriages. I have adopted the same method in treating the *Census of Ireland*, 1881, part ii., using tables 105, 111, and 114, on pp. 288, 294, 296.

[1] *Irish Census Report*, 1881, p. 43. See also Dr. C. A. Cameron, 'Consanguineous Marriages in Relation to Deaf-mutism,' pp. 214 220, vol. i. of the *Transactions of the Academy of Medicine in Ireland*. These gentlemen see a slightly higher percentage of deaf-mutes per family in the marriages between cousins which happen to have produced deaf-mutes, and jump to the conclusion that cousin-marriages in general produce more deaf-mutes than other marriages do. One would think that medical men should learn first what had been done before they begin to instruct others on any subject ; yet, from the discussion on Dr. Cameron's paper (see the *Medical Press*, May 16, 1883), it appears no one present at the meeting was qualified to give an opinion. This is by no means an isolated case, as a glance at almost any medical paper where this subject is touched upon will show.

pointed out, this by no means proves that a greater proportion of deaf-mutes are born from consanguineous marriages than from non-consanguineous marriages.

M. Devic found at Asprières, where to his knowledge many consanguineous marriages take place, only 2 deaf-mutes on a total population of 1,700; and even these 2 were not born from consanguineous marriages.[1] Among the 121 cases collected by M. Devay to show the evil results of consanguineous marriage,[2] it happens, as Dr. Rodet, at the Medical Congress of Lyons, in 1864, pointed out, that there is no example of deaf-mutism.[3]

It has already been shown that these statistics are worthless from the way in which they have been collected. If they be now compared, this will be shown beyond a doubt by the figures themselves:—

Name of Institute or Observer	Total Number Examined	Number found to be Congenital	Number of Consanguineous Origin	Number derived from 2nd-Cousins	Number derived from 1st-Cousins	Percentage on Total from Consanguineous Marriage
Chazarain	—	66	15	—	—	30·4
Bourg, 1886 Girls	30	—	—	—	—	30·4
Bourg, 1886 Boys	30	—	—	—	—	30·0
Brochard	—	55	16	1	15	29·0
Alençon, 1886	49	—	—	—	—	25·0
St. Médard, 1886	152	—	—	—	—	25·0
Lyons, 1886	—	—	—	—	—	18·0
Clermont-Ferrand, 1886	31	—	—	—	—	17·8
Piroux	612	—	—	42		16·0
Ladreit	197	107	17	2	7	15·8
Balley	33	13	2	—	—	15·4
Bemiss	—	183	28	—	—	15·3
,,	—	139	21	—	—	15·1
Poitiers, 1886	80	—	—	—	—	15·0
Rodez, 1886	43	—	—	—	—	14·0
Groningen	241	—	20	—	16	12·3
Dally	315	120	14	—	6	11·7
Allen	—	—	—	—	—	11·0
St. Brieuc, 1886	90	—	—	—	—	10·0
Institute Houdin, 1886	18	—	—	—	—	10·0
Buxton	—	—	—	—	—	10·0
Irish Census, 1871	4,467	3,503	287	89	128	8·2
,, 1861	4,930	4,458	362	—	—	8·1
Duchy of Nassau	381	—	31	—	14	8·1

[1] Devic, *Gaz. Méd. de Paris*, March 7, 1863, p. 158.
[2] See the Appendix to this work; and Devay, *Du Danger*, pp. 89 104.
[3] *Congrès Médical de France*, 8vo, p. 401. Paris, 1865.

Name of Institute or Observer	Total Number Examined	Number found to be Congenital	Number of Consanguineous Origin	Number derived from 2nd-Cousins	Number derived from 1st-Cousins	Percentage on Total from Consanguineous Marriage
American Schools, 1886	1,278	—	97	19	63	7·5
Bordeaux, 1886	194	—	14	—	—	7·2
Marseilles, 1886	57	—	—	—	—	7·0
Puy, 1886	55	—	—	—	—	7·0
Irish Census, 1881	3,993	3,163	195	46	123	6·2
,, 1851	4,747	4,127	242	—	—	5·8
Ehain	87	—	5	—	—	5·7
Hutton	100	—	56	—	—	5·6
Mitchell	544	—	28	—	—	5·1
Touestier	86	—	4	—	4	4·6
Chambéry, 1886	90	—	—	—	—	4·5
Milan Commission	306	—	12	11	1	3·9
Lent	370	—	13	—	—	3·5
Bordeaux, 1878	173	—	6	—	—	3·5
Hermann	2,644	—	69	—	—	3·0
Scott	241	—	7	—	—	2·9
Laval, 1886	71	—	—	—	—	2·8
Lefebvre	80	—	2	—	2	2·5
Meyer	42	—	1	—	1	2·4
Glondy	—	56	1	—	1	1·8
Freibel	92	—	1	—	—	1·0
Patterson	130	63	? 1	—	—	1·6 or 0
Rillé, 1886	49	—	—	—	—	0·8
Hopper	113	66	0	—	—	0·0
Bôke	107	16	0	—	—	0·0
Benzengue	129	—	—	—	—	0·0
Gunkel	235	—	0	—	—	0·0
Auray, 1886	60	—	0	—	—	0·0

We see in this table differences between the results of different observers of 0 per cent. up to 30 per cent.; a difference utterly inconsistent with trustworthiness.

Since children born from consanguineous marriages are no more exempt from diseases of the eyes than those born from any other kind of marriage, this also forms an article in the charge against them. But here again no satisfactory statistics in support of such a theory have been adduced sufficient to prove that these marriages are the cause and not, for instance, inherited syphilis, which may cause iritis, or retinitis, or injuriously affect the optic nerve, as it may other nerves of special sense, and thus cause complete congenital blindness; nor chronic hydrocephalus, which may cause atrophy of the optic nerves, or strabismus; nor other diseases of the brain

and nervous system, such as idiocy and other disease of obscure origin, all of which we know may arise independently of any consanguinity of the parents.[1] Yet Dr. Liebreich, the well-known oculist, has advanced the theory that that particular disease known as *retinitis pigmentosa* is the result of these marriages, and attempts to substantiate his theory by the help of some statistics from the asylum for deaf-mutes at Berlin. His attention being first called to the matter on finding that one of his patients was the child of first-cousins he made inquiries, and found that, out of 35 persons suffering from *retinitis pigmentosa*, 14 were deaf-mutes, 3 idiots, and 18 could hear; and out of 26 whose parentage was traced, 14 were derived from marriages between relations. The whole 14 were distributed among six families, three of which had one apiece, one had 2, another 4, and another 5 affected. To these belonged 5 of the deaf-mutes affected with retinitis, 3 who could hear, and the other 5 he failed to trace the parentage of. Therefore on a total of 26 cases, in which alone the parentage was traced, 53·8 per cent. were the produce of consanguineous marriages, or more than half the cases of *retinitis pigmentosa*! In Paris, on a total of 329 deaf-mutes, he found 11 also suffering from retinitis, of which 4 were the offspring of consanguineous marriages, 2 of non-consanguineous marriages, and the parentage of the remaining 5 could not be traced. Of 66 people who were otherwise healthy but suffered from *retinitis pigmentosa*, 25 were the offspring of consanguineous marriages, 38 of non-consanguineous marriages, and the parentage of the remaining 3 could not be traced.[2] Taking all these together, we have a total of 95 cases where the parentage was traced, 43 of which were of consanguineous origin, or 45 per cent.

M. Hocquard examined 200 deaf-mutes in the institute at Paris, of which 5 suffered from *retinitis pigmentosa*. Out of these 1 was not derived from consanguineous marriage, the origin of another could not be traced, and the remaining 3 were the children of cousins, or 75 per cent. M. Hocquard

[1] *Reynolds' System of Medicine*, i. 740, 763; ii. 38, 262, 264, 412.

[2] Liebreich, in the *Deutsche Klinik*, February 9, 1861, pp. 54, 55; Chipault, *Études sur les Mar.* pp. 58, 59.

insists on the very strong inheritability of this disease.[1] When, therefore, we see such items as 5, 11, 35, and so forth, the objections made to the statistics on deaf-mutes apply with redoubled force. M. Hocquard might another time have found 99 per cent of these cases of consanguineous origin, or, just as likely, none at all.

Professor Magnus, from a comparison of his own investigations with those of others, found that from 25 to 33 per cent. of the cases of *retinitis* were derived from consanguineous marriages. But on a further comparison of the percentage of marriages producing this disease which were between relations with the percentage of marriages which showed an inherited tendency to disease in having other members or relations afflicted, he found that these latter were two and a half times more frequent than the former.[2] This, then, is precisely what we should expect in the ordinary law of inheritance ; namely, that those marriages between relations which did happen to produce disease would produce it in greater intensity ; that is in an inquiry in an asylum double the real proportion would appear to be derived from consanguineous marriage, while a census would show double the proportion of marriages between non-relatives produced disease. Professor Magnus then sent out circulars of inquiry and received 545 answers ; of which 457 stated heritable tendencies or collateral disease in the patients' families, and only 374 stated whether there was any relationship between the parents. Of these latter, in 45 cases, the parents were related, these being in 1 case uncle and niece, 27 cases first-cousins, 4 cases of second and third-cousins, and 13 cases in which the relationship was not stated ; that is, out of 374 cases of disease of the eyes generally, 12 per cent. of the patients were derived from consanguineous marriage. If we halve this for the double inheritance we get 6 per cent., and again taking off 2 per cent. for the greater fertility of marriages between relatives, we get 4 per cent., which may be even under the proportion of first-cousin marriages to all marriages.

[1] Hocquard, *De la Rétinite Pigmentaire.* Thèse de l'École de Méd. de Paris, No. 204, 1875, pp. 66, 87.

[2] Magnus, 'Die Blindheit.' Cited by Zepler, *Ueber den Einfluss der Verwandten-Ehe auf die Nachkommenschaft*, etc. pp. 27, 28.

Among the 45 cases 12, or 26·7 per cent., were *retinitis*, while 12·67 per cent. was the proportion in the whole 545 cases. We see, therefore, that when we allow for the double inheritance this is not in excess, and, as I have before explained, it by no means follows that, taking all consanguineous *marriages* into account, in place of only looking at the diseased *children*, a consanguineous marriage is any more likely to produce *retinitis pigmentosa* than is any other marriage. Indeed, if we look at the cases where there is collateral disease, we find that 23 out of the 45 consanguineous cases show it, or over 50 per cent. ; while of the 457 cases 122, or 26·7, only show it ; which exactly confirms our contention, and shows, moreover, that while relations do generally marry without any consideration of family-inherited tendencies, yet they do sometimes take these into consideration, and thus by their family knowledge are saved from producing diseased children. Comparing the intensity of inheritance we have—

Number of Brothers and Sisters also afflicted	In Cases		Per Cent.	
	Consanguineous	In Total given	Consanguineous	In Total given
1	9	70	39·21	57·47
2	7	27	30·39	22·10
3	2	22	8·69	18·50
4	4	2	17·31	1·64
5	1	—	4·35	—
6	—	—	—	—
7	—	1	—	0·82

by which it will be seen that inheritance is intensified by consanguineous marriage.[1]

Dr. Fieuzal examined very many persons in the course of two years and a half, among which he found 21 who suffered from this disease. Of these, 8 were of consanguineous parentage, the degree not being stated, or 38 per cent. At the hospital of Quinze-Vingts he found 2 cases, neither of which was of consanguineous origin.[2]

At Bicêtre, Dr. Liebreich told M. Chipault he found no case of retinitis among 89 idiots ; but he found 1 case among

[1] See Zepler, *ut sup.* pp. 28–36.

[2] Lacassagne, art. 'Consanguinité,' in the *Dict. Encyclop. des Sciences Médicales*, pp. 684, 685.

69 idiots at Salpêtrière.[1] Taking the mean alleged percentage of these 158 idiots, that ought to be derived from consanguineous marriages if the observations collected above[2] could possibly be correct, or 9 per cent., we find that 14·2 ought to be so derived, of which only 1 was afflicted with retinitis, instead of about 8 ; nor do we know that that 1 was of consanguineous origin. It is evident, however, that *retinitis pigmentosa* is an uncommon disease, and even more evident that 95 cases are much too few to generalise on. There was not one case of this disease in the commune of Batz, in which, as we have already seen, there was a population of 3,300, among whom were 46 consanguineous marriages ;[3] certainly a sufficiently large number to find cases in if Dr. Liebreich's theory be true.

Another common accusation against these marriages is that they cause congenital malformation in the offspring. But congenital malformations are in nearly all cases due to a morbid state of the cerebro-spinal nervous system acting through the muscles to distort the bones. Any irritation before birth, therefore, may cause it ; it may occur of course in anencephalous infants, and also in cases of *spina bifida*. Like other diseases of nervous origin, it may be inherited directly ; but it may also be inherited through other diseases which react on the nervous system, such as a rheumatic or scrofulous affection of the joint, which may either directly affect the nerve and cause disease in it, or cause deformity in the limb, because the patient finds it too painful to move it. In this last way again almost any lesion may produce deformity ; or a mere habit may do the same. It is possible that it may be caused occasionally by irregular uterine contractions, which may in their turn be caused by a sudden alarm to the mother ; and in cases of extreme obesity where the pressure interferes with due nutrition, or where the state which produced fat in the parent also interferes with the nutrition of the fœtus ; but this is probably only very rarely a cause. It

[1] Chipault, *Études sur les Mar.* etc. p. 57. [2] See p. 212 of this work.
[3] Voisin, 'Contribution à l'Hist. des Mar. entre Cons.' in the *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 446. See also pp. 160, 161 of this work, and the Appendix, Cases Nos. 254–299.

may be caused by an arrest of development, since Wagner has shown that club-foot is natural to the fœtus up to the fourth or fifth month, and even later, and the same is the case with cleft-palate and hare-lip. It may be caused at birth, especially when parturition is assisted by a clumsy midwife, or by the use of instruments, or when the passage is narrow between the bones of the pelvis ; probably many infants have received a life-long injury through pressure on their soft and yielding heads ; but in these cases it is rarely that the upper extremities are deformed.[1] It is also connected with the period of life of the parent in which the child is born, and with the position in the family of the latter, whether it is a first or last birth or not. For Dr. Duncan found that twin-bearing was most frequent at the extremes of the child-bearing age ; and he found, further, a connection between twinning and the production of idiocy and bodily deformities ; indeed, the greater number of idiots are twins ; and anencephalous monsters hardly ever, perhaps never, occur unless in plural births, in which also miscarriages and hydramnios are more frequent.[2] Aristotle considers premature marriage produces puny and dwarfed offspring,[3] and Dr. Duncan corroborates this statement so far as it concerns the weight and size of infants.[4]

It is necessary, therefore, in gathering statistics as to any supposed relation between consanguineous marriages and the production of malformations to consider the age of the parents, the number of the birth, whether the malformed was a twin, whether the parents suffered from any nervous affection or disease belonging to the *degenerative* class, such as scrofula, tubercles, syphilis, etc. whether they were always sober, and many other like considerations equally important and impossible to collect, and yet withal to leave a margin for accidental causes. Of course, if the statistics were taken from

[1] Brodhurst, *The Deformities of the Human Body* ; Salt, *On Deformities, etc. of the Lower Extremities* ; Adams, *Club-foot : its Causes*, etc. ; Carpenter, *Human Physiology*, p. 866 ; Lannilongue, *Du Pied Bot Congénital.* Thèses de l'École de Méd. de Paris, 1869, pp. 47–59.

[2] Duncan, *Fecundity, Fertility, and Sterility*, pp. 76, 78, 80, and 68, note. The connection between twinning and monstrosities is shown in the production of hermaphrodites when twin calves are born.

[3] Aristotle, *Hist. Anim.* book v. chap xii. sec. 1.

[4] Duncan, *Fecundity, Fertility, and Sterility*, p. 64.

the whole population, and were numbered by millions of cases instead of a few hundreds, and if we also knew the proportion which consanguineous marriages bear to others, the thing might be done; at least as far as the influence of consanguineous marriages on malformations is concerned; but even then it would be impossible to say whether any evil effect was caused by the intensification of a previous family taint; or, as many authors would have us believe, by the mere fact of consanguinity of itself.[1]

Out of 146 children, the produce of 37 consanguineous marriages, Dr. Mitchell found 3, or 2 per cent., were deformed, and 6, or 4·1 per cent., were lame;[2] and out of 3,942 children, the produce of 780 consanguineous marriages, 2·4 per cent. were deformed, according to Dr. Bemiss.[3] I have already remarked on the untrustworthiness of statistics collected in the way in which these are, and will only refer the reader to the history of certain isolated communities, given above, where consanguineous marriages are common; and to the history of certain individual families where marriage in-and-in was customary, given in the Appendix to this work. As an instance, however, of the loose way in which these charges are made, I will quote M. Devay, who says that an abnormal number of digits is 'of all malformations that which I have most frequently noticed.'[4] To support this wonderful theory he cites the instance of a boy, the child of first-cousins, whose toes were undivided; and says he found 17 cases of these malformations in the progeny of 121 consanguineous marriages. He further gives an instance of a little village, near Côte-St.-André and Rives, in the department of Isère, called Izeaux, very isolated, and situate on barren soil. The inhabitants, owing to the nature of the roads, necessarily intermarry much among themselves, and form in reality but one family. Now comes the dreadful part of his story. Towards the end of the eighteenth century all of them, men, women, and

[1] Boudin, *Ann. d'Hygiène*, xviii. 17 *et seq.*; Devay, *Du Danger*, etc. p. 143; Chazarain, *Du Mariage entre Cons.* etc. p. 13 *et seq.*; Herbert Spencer, *Biology*, i. 290; Darwin, *The Variation of Animals and Plants*, etc. ii. 94, etc.

[2] Mitchell, *Mem. read before the Anthropological Society of London*, 1866, ii. 403. [3] Bemiss, *Trans. of the American Med. Assoc.* 1858, xi. 420, 421.

[4] Devay, *Du Danger*, etc p. 94.

children, had an extra finger on each hand, and an extra toe on each foot! They gradually resumed their normal form about the year 1847 through crosses.[1] It is, perhaps, a pity that the people of Izeaux got rid of their so-called deformity—the sixth digit might in time have revolutionised the world. Who can say what advantages a sixth finger might not confer on a race by dint of careful breeding and exercise! If, however, M. Devay means to assert that in a space of about fifty years there were no inhabitants in all Izeaux with more than the normal number of fingers and toes, after every person in the place had had them, the fact is one of the most extraordinary on record, for polydactylism is most strongly hereditary.[2] If, again, M. Devay means to assert that this abnormal growth was originated by consanguineous marriage, I have no hesitation in flatly denying it; for all observation hitherto has shown that crosses are far more likely to produce abnormal developments through imperfect atavism; while in-and-in breeding is perfectly well known to have a tendency to fix the type so that it never changes. It is known that the five-fingered hand is the modern representative of an extremity that had at least seven rays; and it has been recently shown that six digits are normally present in the human fœtus.[3] While as for the possibility of getting rid of this appearance in a short time, take the example of polydactylism in cats, an animal that from its wandering habits is very unlikely to breed for more than one generation in-and-in. Mr. Paulton gives an instance of a family of cats which showed the strongest tendency to the inheritance of this abnormality, and in cases where close interbreeding could hardly have been possible; yet the polydactylism was observed for generations in spite of the swamping effect of crosses.[4] The like is reported by Mr. Hagan from Massachusetts.[5]

Rickets and rickety malformations have constantly been attributed to marriages of near kin; and here again, as in so

[1] Devay, *ut sup.* pp. 95-97, 101.

[2] See *i.a.* Darwin, *Animals and Plants*, 1875, i. 457-459; *Nature*, xvii. 372; xviii. 94; xxiv. 166.

[3] Weismann, *Die Bedeutung der sexuellen Fortpflanzung*, p. 53. Jena, 1886.

[4] *Nature*, 'Observations on Heredity in Cats with an Abnormal Number of Toes,' xxix. 20, 21; xxxv. 30-41. [5] *Ibid* xxxv. 345.

many instances, it is only because the causes of this disease are not yet accurately determined that persons have been able to attribute it to these marriages, not only unchallenged but with applause.

Rickets, together with phthisis, tabes mesenterica, tubercular meningitis, hydrocephalus, spina bifida, and a few others, with their consequent mental and nervous diseases, are at present considered merely different members of the great scrofula family of disease, the causes of which are in some forms still insufficiently worked out. It may, however, be said, generally, that none of these diseases are very easily caused by direct inheritance ; that they are all, so far as we know, due to the presence of a microscopic organism ;[1] and that the only possible way in which consanguineous marriage could be a factor is either by a possible intensification of inheritance or by producing children of low vitality who will be more susceptible to the infection. As regards rickets, there is considerable doubt that it is ever directly inherited ; and, as regards post-natal causes, imperfect assimilation of food, impure air, and want of sunlight probably play a considerable part.[2] That phthisis may be inherited is possible ; indeed, it is known that the micro-organisms which produce splenetic fever may be transmitted to the fœtus.[3] But though infants are born from highly consumptive parents to live but a few weeks or months when they are found to have both large and miliary tubercles in their lungs, I am not aware that still-born infants of a consumptive father but healthy mother have been found in this state. That this disease is always, however, caused either directly or indirectly by the presence of a specific bacillus is established almost beyond a doubt by Koch and others. How great a part the want of ventilation takes, first by lowering the vitality, and secondly by increasing the chances of infection, is shown by statistics ; for the spores of the bacillus which swarm in the sputa of consumptive persons will lie dormant for a considerable time,

[1] See Sir J. Simon's lecture, reported in *Nature*, xxiv. 370 *et seq.*

[2] *Reynolds' System of Medicine*, i. 805–808.

[3] Perroneito, in the *Archives Italiennes de Biologie*, for April 15, 1883, vol. iii. fasc. 1.

and still retain their powers of development. All herbivorous animals are easily infected, and their meat is dangerous unless it has been subjected to a heat not less than that of boiling water. Cows frequently are infected; and their milk is peculiarly dangerous, because it is generally taken without having been previously boiled.[1]

Hydrocephalus when congenital is generally, but not invariably, due to an arrest of development of the cerebral mass, assisted by slow inflammation of the arachnoid, especially of that part lining the ventricles. Syphilis is a frequent cause of this, both by the production of syphilitic nodes and by the great tendency there is in these patients to serous inflammation. The inflammation may also attack a child after birth, and even begin late in life; but in the last case the dropsy is generally caused by the mechanical effect of a cancer, tubercle, or cyst, or of some hurt by which the veins are impeded, thus causing a watery exudation in the neighbouring part, while it prevents the absorption of the serum naturally there. Hydrocephalus is often aroused when latent by whooping-cough; but in this case the whooping-cough is itself the result of general constitutional disease. Spina bifida, or hydrorhachis, is another form of development of this tendency; a frequent result of hydrocephalus and the commonest congenital spinal affection. Here, again, is slow inflammation, but the result of a bifid spine is purely mechanical.[2]

In the same way convulsions in infancy cannot be set down to the influence of consanguineous marriage unless it can be shown that it has not been influenced by rickets, dentition, wrong-feeding, diarrhœa, etc. It may be caused by—

1. The advent of an acute illness.

2. The presence of a tumour, abscess, or syphilitic node, or other mental hurt.

3. Chronic disease; such as rickets, emaciation, diarrhœa, and other exhausting types.

[1] See the *Comptes Rendus de l'Acad. des Sciences de Paris*, Toussaint, March 29, 1880, and August 1, 1881; Peuch, June 28, 1880; Giboux, May 22, 1882. Also Dr. C. Creighton, 'An Infective Form of Tuberculosis,' in the *Journal of Anatomy and Physiology*, xv. 1 *et seq.* Mr. Watson Cheyne, reported in *Nature*, xxvii. p. 563.

[2] *Reynolds' System of Medicine*, i. 58, 823; ii. 410, 411, 719.

4. Temporarily, by an overloaded stomach, teething, worms, diarrhœa, etc.

5. Brain disease; such as epilepsy, etc.

Among its consequences are paralysis, amaurosis, defects of speech, strabismus, and mental hurts, such as idiocy, etc.[1]

The reader will, I hope, excuse me this long dissertation on the causes of these diseases. But it is necessary that we should distinctly see that, so far from their real origin being even tolerably clear, they are involved in great obscurity; and that we should know what other causes are generally assigned to these scourges of humanity before we attempt to judge that alleged by the Parasyngeniasts. We see what a variety of causes, totally independent of consanguinity, may produce scrofulous disease and degeneration; and how impossible it is —nay, how wicked, with only a few selected cases of consanguineous marriage for proof—to accuse these of the production of scrofula. M. Chazarain refers to Lugol for support to his statement that in ancient times, before there were many roads, and when intercommunication was difficult, the country people as a rule intermarried among themselves; that they degenerated in consequence, and scrofula became more common than it is now.[2] Lugol, however, gives no support to this conclusion. Throughout the six or seven pages he devotes to the consideration of the effects of crosses on scrofula, he gives no authority for his wide and somewhat vague statements; while he only twice mentions even the names of any observers, to wit, Buffon and Alexandre Bodin. It is impossible to accept such an assertion on such vague authority.[3]

Consanguineous marriages have been further accused of causing ichthyosis and leprosy; abnormally sized heads and prognathous jaws; and dwarfing;[4] and M. Aubé actually attributes hydatis in the liver to their effect! The same gentleman also attributes albinoism to these marriages;[5] but

[1] *Reynolds' System of Medicine*, ii. 262, 263, 265.

[2] Chazarain, *Du Mariage entre Cons.* etc. p. 12.

[3] Lugol, *Recherches, etc. sur les Causes des Maladies Scrofuleuses*, p. 317.

[4] Devay, *Du Danger*, etc. pp. 52, 90, 104, 187; Balley, *Gaz. Méd. de Paris*, December 5, 1863, p. 804.

[5] Aubé, in the *Bulletin de la Soc. Imp. Zoologique d'Acclimatation*, iv. 510, 511, *i.a.*

since he confines his proofs to the lower animals, we will defer the consideration of this last accusation to the next chapter, merely premising that we really know nothing as yet as to its production, but that Beigel shows some cause [1] for the belief that a great shock to the nervous system of the mother, whether sudden, or by gradual depression, or by nervous disease, may cause albinoism in the offspring.

[1] Beigel, *Albinismus*, etc. Dresden, 1864.

CHAPTER VI.

THE RESULTS OF IN-AND-IN BREEDING ON THE LOWER ANIMALS.

IN the last chapter we have seen how many and how complicated are the causes which lead to the various diseases supposed to be produced by the intermarriage of near kin; and how impossible it is to lay our hands on any one case and say, this is certainly due to the consanguinity alone, and can be due to no other cause. Nay, even if we be intimately acquainted with the whole history of a given case, and find that, so far as our knowledge goes, there is no apparent cause but the consanguinity of the parents, we are yet by no means sure that there may not be other causes, as yet unrecognised, capable of producing that particular effect. All this applies more particularly to man, on whom we cannot experiment as we can on other animals, so as to exclude as far as possible all disturbing factors, and retain consanguinity alone. For this reason no amount of observations on isolated cases of consanguineous marriages, or on isolated communities who have continually intermarried among themselves, will enable us to determine, unless negatively, whether any observed disease in the offspring has been inherited, or whether it is owing to a morbid influence of consanguinity in marriage, whether, in other words, consanguinity pure and simple is a primary cause of disease.

A census would dispose of the practical question as to whether it is expedient that these marriages should be permitted or not. It matters little to the State whether consan-

guineous marriage is a primary or secondary cause of disease. But if it be found that there is so great a difference between the results of consanguineous and non-consanguineous marriages, that by permitting the former a manifest increase of idiocy, deaf-mutism, or other disease is caused, by which the population is saddled with a heavy charge for the production and maintenance of individuals not only useless, but injurious to the community, in that case the State is both justified and bound to put what restraint it is able on individuals to prevent these marriages. On the other hand, if so marked a result is not discoverable, it would be both impolitic and dangerous for the Government to discourage them. No census, however, as I have pointed out, could determine whether consanguinity can be a primary cause of disease. For that we must interrogate Nature, as she has already been so successfully interrogated on other physiological questions. We must experiment on the lower animals, since we may not experiment on man.

It has been objected to this method of investigation of the subject of this work, by many authors who at the same time have not hesitated to avail themselves of it when it has suited their arguments, that observations on the lower animals are not applicable to man. They remind us, for instance, that disturbances of the locomotive system produced by lesions of the semicircular canals of the ear are not identical in different animals. In the frog the muscles of the trunk are affected; in the pigeon, those of the head; in the rabbit, the rotatory muscles of the eye-ball.[1] That caries of the teeth, though a prehistoric disease in man, is unknown in any other animal.[2] That opium will produce tetanic spasms in the frog, but not in man.[3] That sulphate of atropine will not kill crustacea.[4] That frogs[5] and birds[6] and wasps and blow-flies[7] cannot be inoculated with anthrax. That the long flower-stalks of the dragon-tree serve as excellent food for the camel, but are

[1] Cyon, in the *Comptes Rendus*, for April 10, 1876.
[2] Professor Busch, *Physiological Society of Berlin*, May 2, 1884.
[3] Watson, *Principles and Practice of Physic*, i. 576.
[4] Yung, in the *Comptes Rendus*, for July 21, 1879.
[5] Gibier, *Comptes Rendus*, for June 12, 1882.
[6] Pasteur, *Acad. de Méd. de Paris*, July 9, 1878.
[7] Maddox, *Journal of the Microscopical Society*, for June 10, 1885

almost a poison to goats.[1] That *diabetes mellitus* is not known to occur in any animal but man.[2] That dogs are very much more affected than rabbits by nitrophenolpropiolate of soda, independently of the diet.[3] That rats and mice can feed on red-lead and putty ;[4] and so forth.

But with all this it is impossible to show any real physiological difference between the lower animals and man. As to lesions of the brain, great care is requisite not to injure neighbouring tracts, and so produce apparently different effects from apparently identical injuries. Caries of the teeth depends very much on the structure of the teeth. The temperature of the blood in frogs is too low, and in birds too high, to suit anthrax ; but if frogs are kept at a higher temperature, or birds cooled, they may take it. On the other hand, to experiments on animals most of the greatest physiological discoveries are due, and by the continuance of such experiments is further advance alone possible. This is a truth so universally recognised that experiments are made as a matter of course upon animals in order that their results may be applied to man, and though such results are at first applied tentatively, and with extreme caution, because in the case of drugs the power of resistance in animals is very different in degree, and in surgery the more sensitive organisation of civilised man is apt to complicate the operation, yet of real difference except in degree there is none, and what little difference we do find between man and the higher animals may also be found in a like degree between different races of men. Hemp, for instance, will sometimes produce a cataleptic state in Asiatics, which it will not in Europeans, and, in place of the exhilarating effect common in Asia, it produces simple delirium in Europe.

The more the diseases of the lower animals are studied, the more are they found to be identical with those of man, and to be brought about by the same causes in each case where the cause itself is not due to a special habit. We even find that animals are subject to nearly every brain disease, as

[1] Schweinfurt, *The Heart of Africa*, i. 22.
[2] Watson, *ut sup.* ii. 723.
[3] Hoppe-Seyler, *Physiol. Soc. of Berlin*, May 11, 1883.
[4] Storer, *Bullet. of the Bussy Inst.* 1884, vol. ii.

well as to others which were formerly supposed to be found in man alone ;[1] and the absolute identity of some of them, and by analogy of most of them, is established by such diseases as small-pox, hydrophobia, glanders, anthrax, and probably tuberculosis, which are intercommunicable among all the higher animals ;[2] and by diseases which occur both in man and

[1] Swift, *Gulliver's Travels*, in the Voyage to the Houyhnhnms.

[2] Jenner found that cows got small-pox from horses which had been tended by the same persons who milked the cows, and its absolute identity is not only shown by the immunity guaranteed by the transference of small-pox from the cow to man, but also by the reverse experiment that it may be communicated by inoculation from men to cows, and that the matter from the vesicles thus produced acts in all respects like ordinary vaccine matter when again used on man (Sir Thomas Watson, *Lectures on the Principles and Practice of Physic*, ii. 940, 956, 957). Dr. Marsden thinks that inoculation from sheep-pox would be as efficient as that from the cow (*Reynolds' System of Medicine*, i. 224), and Stephens asserts that inoculation on sheep has the same effect as on the human subject (Stephens, *The Book of the Farm*, i. 487). Dogs also are known to suffer from small-pox ('Stonehenge,' *On the Greyhound in* 1864, p. 81).

Hydrophobia may be communicated to man by dogs, wolves, foxes, cats, horned cattle, horses, pigs, goats, sheep, badgers, martens, deer, and other animals (J. and A. Gamgee, *Reynolds' System of Medicine*, i. 333, 334, 335, 337, 339). Birds also are liable to rabies, but recover spontaneously (Gibier, in the *Comptes Rendus de l'Acad. des Sciences de Paris*, for February 25, 1884).

Glanders is known to be communicable to man by the horse, ass, or mule ; and may be produced either by inoculation or by a mere touch. The pig also may be inoculated with virulent glanders. The disease in man may be communicated to other men, or to the ass. (J. and A. Gamgee, *ut sup.* pp. 313, 314, 321, 324 ; and MM. Galtier, and Cadiac and Malet, in the *Comptes Rendus*, for February 7, 1881, and November 2, 1885).

Homer describes most accurately the progress of anthrax (in the *Iliad*, book i. ll. 50, 51) :

> οὐρῆας μὲν πρῶτον ἐπῴχετο, καὶ κύνας ἀργούς·
> αὐτὰρ ἔπειτ' αὐτοῖσι βέλος ἐχεπευκὲς ἐφιεὶς,
> βάλλ'.

So in Yunnan Fu, where anthrax is endemic, it first attacks the rats, who come out from their hiding-places, and die in crowds, turning round and round as if giddy. The remainder migrate in vast numbers to the fields. Then buffaloes, cattle, sheep, and men are infected. (Capt. Wm. Gill, *The River of Golden Sand*, ii. 304 ; also Rocher, *La Province Chinoise du Yünnan.*) The same, with the same symptoms of giddiness, is described by Boccaccio in his account of the pest (Black Death) of 1348–1360, when not only men but also animals which came in contact with pest-stricken persons, or with their clothes, were affected. 'Maravigliosa cosa è ad udire,' says Boccaccio, 'quello che io debbo dire : il che se dagli occhi di molti e da' miei non fosse stato veduto, appena che io ardissi di crederlo, non che di scriverlo, quantunque da fede degno udito l' avessi. Dico che di tanta efficacia fu la qualità della pestilenzia narrata nello appiccarsi da uno ad altro, che non solamente l' uomo all' uomo, ma questo, che è molto più, assai volte visibilmente fece ; cioè che la cosa dell' uomo infermo stato, o morto di tale infermità, tocca da un altro animale fuori della spezie dell' uomo, non solamente della infermità il contaminasse, ma quello infra brevissimo spazio uccidesse. Di che gli occhi miei (siccome poco davanti è detto) presero trall' altre volte un dì così fatta esperienza : che essendo gli stracci d' un povero uomo, da tale infermità morto, gittati nella via pubblica, e avvenendosi ad essi due porci, e quegli, secondo il lor costume, prima molto col grifo, e poi co' denti presigli, e

in the lower animals, and which we know to be induced by the same causes in both cases, such as influenza, lead colic, ague, typhus fever, and others, both epidemic and chronic.[1] There

scossiglisi alle guance ; in piccola ora appresso, dopo alcuno avvolgimento come se veleno avesser preso, amenduni sopra gli mal tirati stracci morti caddero in terra' (Boccaccio, *Decamerone*, Introduzione, pp. 8, 9). Dogs, cats, fowls, and other animals were infected in crowds. In Gaza 22,000 men and most of the animals died pest-stricken within six weeks. In England domestic animals lay dead in every hedgerow ; and it is said that no beast or bird of prey would touch their carcasses (Hecker, *Volkskrankheiten*, etc. pp. 26, 27, 45, 51).

Tuberculosis has been fully shown to be infectious between man and animals, but whether the disease is exactly the same is not quite so certain, yet though the form of the attack, perhaps, differs slightly, the same micrococcus appears to be present in all cases. Dr. Fleming shows that sheep, goats, pigs, rabbits, and even the porpoise may be experimentally infected, as well as cattle (*Brit. and For. Med.-Chir. Review*, for Oct. 1874, liv. 461–486), and that carnivorous animals give negative results (*ibid.*) may perhaps be explained by natural selection. An elephant died of tuberculosis in the Zoological Gardens (the *Times*, July 17, 1875 ; the *Comptes Rendus de l'Acad. des Sciences de Paris* for the last six years contain many confirmatory papers by M. Toussaint. See also Sir J. Simon's 'Address,' in *Nature*, xxiv. 371, 372). Tuberculous disease is also known to occur in monkeys and birds.

The recent investigations of Dr. Klein and Mr. Power show that scarlet fever is identical with a cow-disease called 'garget,' and also is closely connected with diphtheria. Dr. Klein traced an outbreak of scarlet fever to cases of garget in cows from which the milk supply had been obtained; he separated the micrococcus and cultivated it, and found the same organism in cows and human beings. Mice were affected in the same way from whatever source the inoculating micrococcus was obtained ; and calves were directly infected by the organism from human cases of scarlet fever (see the abstract of the report of the Medical Officer of the Local Government Board, in the *Times* for July 5, 1886 ; also in *Nature*, xxxiv. 213. And *Nature*, xxxv. 452, 453, for an abstract of Dr. Klein's lecture on 'The Etiology of Scarlet Fever,' at the Medical School of St. Bartholomew's Hospital).

[1] Dogs, cats, horses, and possibly birds, have been affected simultaneously with influenza when that disease was rife (Dr. Parkes, in *Reynolds' System of Medicine*, i. 37). And, during the epidemic catarrh, which proved so fatal to horses in America, in 1872–73, it was noticed that pigs also were frequently affected when fed in the neighbourhood of horses suffering from that disease (see the *Times* for Dec. 21, 1872).

Animals are certainly subject to ague, and they seem to desert aguish places. Bishop Heber states that these in the upper provinces of India are deserted by most animals during the ague months (Sir Thomas Watson, *Lectures on the Principles and Practice of Physic*, i. 769, 770, 781).

Rooks and gulls have been known to die in quantities when cholera was rife (*ibid.* ii. 585).

Dogs, cats, and rats which inhabit houses or manufactories where lead is much used are known to become affected with lead-colic (*ibid.* ii. 558).

Brain diseases, oftenest dependent on some morbid growth in the brain, are common to cattle ; or they may suffer from phrenitis, and consequent coma and delirium. Horses, pigs, and dogs are also liable to inflammation of the brain, and the latter are also subject to a disease known as 'turnside' from injury to one side of the brain, and to chorea. Paralysis may occur in dogs, pigs (often induced by the *cystocercus*), horses, cattle, and fowls. Epilepsy is common to horses, pigs, and dogs ; tetanus to cattle, horses, and pigs ; apoplexy to cattle, horses, pigs, and fowls ; the ophthalmias to cattle, horses, and dogs, which are also liable to amaurosis, cataract, otitis, and mutism. Fowls are subject to asthma. Cattle and pigs are liable to the foot-and-mouth disease. Coryza and catarrh are common

are, of course, some differences between the physiological functions of mankind and the lower animals, but the general features are the same ; and though it might be easy to pick out one function in one animal which does not exist in another, this will be found to be either a special modification, or it will be a minor function, or the experimenter has omitted to take

to cattle, horses, sheep, dogs, and fowls. Laryngitis is known to occur in cattle, horses, and dogs ; bronchitis in cattle, horses, pigs, and dogs. Pleuro-pneumonia (sometimes differing from that in man in its contagious property) is common to cattle, horses, pigs, and sheep. But Dr. Friedländer shows that human pneumonia is due to the presence of a micrococcus, which he communicated to mice, guinea-pigs, rabbits, and dogs. The mice all died of pneumonia ; the guinea-pigs were less liable ; the dogs less still ; and the rabbits were proof against them. Quinsy is known in pigs. Emphysema is common in horses, arising from the same cause as in man. Diseases of the heart and large blood-vessels, the same as in man, are common to cattle, horses, and pigs (though disease of the heart is always on the left side). Peritonitis is common to horses, pigs, and dogs ; dropsy, of various kinds, to cattle, horses, dogs, and fowls ; diarrhœa, dysentery, constipation, and colic to sheep, cattle, horses, pigs, dogs, and fowls. Hernia, umbilical and congenital, is known in cattle and pigs. Cases of intussusception of the bowel have been known to occur in cattle ; and protrusion of the rectum in pigs. Gonorrhœa is known in cattle. Diseases of the kidney, such as nephritis, fatty degeneration, and hæmaturia, are common to cattle, horses, dogs, and cats. Cystitis, as in man rarely idiopathic, is common to cattle and horses. Calculi, both in the gall and urinal bladders, have been found in cattle, horses, pigs, and dogs. Jaundice is common in horses, dogs, and sheep, frequently caused by hepatitis ; and, as in man, with well-marked sympathetic pain in the shoulder, so that sheep thus affected frequently seem to be lame. The true distemper in dogs is identified by Walsh with typhus fever. Diphtheria may be transferred by inoculation from human beings to animals. M. Nicati transferred true diphtheria from the fowl to the rabbit ; and Prof. Gerhardt from fowls to cats, a parrot, and to man. Dogs are known to have bleeding and other cancers, commonest in those parts where they are commonest in man ; and to suffer from anæmia, which is curable by the same tonics which cure a like state in man. Rickets are common to dogs and deer. Congenital hydrocephalus is known in cattle. Rheumatism occurs in cattle, pigs, dogs (but only articular in old and worn-out animals), and in whales, in which the bones are often found altered. Erysipelas is common to sheep and pigs. Horses are said to be subject to nettle rash. Goître occurs in animals in goitrous districts. And albinoism is common to a great many animals (Youatt, *On the Pig*, pp. 193–198, 206, 207, 210–213, 217, 222, 224–226, 230, 233, 235 ; *ibid. On the Horse*, pp. 189–199 ; 'Stonehenge,' *On the Greyhound*, pp. 59–61, 78, 84, 89, 92–100, 104, 108, 109, 121–139 ; Stephens, *The Book of the Farm*, i. 162, 164, 212, 258, 268, 423, 424, 485-487, 536, 537 ; ii. 471 ; Dobson, *On the Ox*, pp. 6, 8, 67, 75–78, 80, 81, 89, 136, 153, 176, 181–186, 201–211, 216, 217, 248, 249 ; Sir Thomas Watson, *Lectures on the Principles and Practice of Physic*, ii. 750, 682; Shirley, *Deer*, etc. p. 243; Struthers, in 'A Paper read before the British Association of 1872,' see the *Popular Science Review* for Oct. 1872, p. 432; St. Lager, *Études sur les Causes du Goître*, etc. pp. 58–61 ; Devay, *Du Danger*, etc. pp. 53–60 ; Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 515 ; Dr. Friedländer, Physiolog. Soc. of Berlin, reported in *Nature*, for December 6, 1883, xxix. 144. Nicati, in *Comptes Rendus de l'Acad. des Sciences de Paris*, for Feb. 10, 1879. Gerhardt, in the *Wiener Allgemeine Med. Zeitung*, reported in the *Times*, Oct. 30, 1883). These are, of course, merely incidental observations, but, to the best of my knowledge, no work exists in any language on comparative pathology.

into account something which is necessary for the success of the experiments. All this is more especially the case as regards generation, which is as unspecialised a function, indeed, a rather less specialised function, than that of the skin ; and varies so little in its essential characteristics from the lowest organisms to the highest that observations deduced from the breeding of domestic animals may very safely be applied to man.

Nevertheless, two kinds of objections have been made to this ; the one, that domestic animals are usually, from Nature's point of view, nothing but monsters. By artificial means, it is urged, a certain part or quality of the animal is unnaturally developed, while at the same time another part or quality is as unnaturally diminished—withdraw man's care and attendance, and what becomes of the so-called improved animal then ? It will languish and die ; and in its place will appear the original stock from which it was developed. The other objection is, that any improvement which may occur is not really due to in-and-in breeding, but to the care of the breeders in feeding, tending, cherishing, and selecting their beasts ; so that the weak are not allowed to breed, nor are they obliged to endure those evils and difficulties of existence which their wilder brethren are forced to undergo.[1]

But what an argument is this ! Without denying one of these assertions, I yet maintain the animal itself is neither any worse nor any better than it was before. I say that it is better than a wild animal in the stall, and a wild animal is better than it in the Llanos. It is an argument which has already been refuted by wild Indians to the shame of white

[1] Gourdon, *Comptes Rendus*, 1862, lv. 269-273 ; Mitchell, *Edin. Med. Journal*, March, 1862, pp. 873, 874, 878 ; Mitchell, *Mem. of the Anthrop. Soc. of London*, 1866, ii. 451, 452 ; Boudin, *Ann. d'Hygiène*, 1862, xviii. 67-70 ; Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 543-549 ; Geoffroy, cited by Périer, *ibid.* 1870, iii. 257 ; Crossman, *Brit. Med. Journal*, 1861, i. 401, 402 ; Low, cited by Mitchell, *Mem. read before the Anthrop. Soc. of London*, 1866, ii. 450, 451 ; Devay, *Du Danger*, etc. p. 48 ; Flourens, *Comptes Rendus*, 1862, lv. 238, 239. M. Boudin 'recommends to the notice of gastronomers' a fact noticed by 'un voyageur étranger, qui a habité la France et l'Angleterre,' who found himself obliged to eat twice as much beef in England as in France to satisfy his hunger ; and which M. Boudin suggests is due to the fact that beef is more in-and-in bred in England than in France (Boudin, *Ann. d'Hygiène*, 1862, xviii. 69, note 5)! The fact says a great deal for the taste of the intelligent foreigner.

men. 'We thank you,' said the Iroquese to the Government of Virginia, in the year 1744, who had offered to educate some of their young men—'we thank you for your kind intentions. We have already had some experience of your education. Some of us whom you educated in all your sciences came back again bad runners, ignorant of all woodcraft, unable to bear heat or cold; they were ignorant how to trap deer, how to build a wigwam; they were ignorant even of our language: what good, then, either to themselves or to us, was their education? No. We cannot accept your offer, though we appreciate your goodwill. But send us, if you like, a dozen or so of your sons, whom we will educate as we do our own, and make *men* of them.'[1] When animals are bred by man he must select for every quality he wishes to develop, and not for one alone. If he selects for but one quality, the others will necessarily deteriorate, because they are neglected. It will not do, for instance, to select pigs only for rapid fattening qualities; or rabbits merely for long ears and a sleek coat; they must also be chosen from a large litter to ensure the hereditary transmission of fecundity. The fact is, that an animal properly bred in-and-in, and a wild animal, is each the most perfect according to its circumstances. Alter the circumstances, and the animal is at once unfit for its place. When the Kyloe breed of cattle was crossed it was found only to become more delicate, because the progeny were not so well acclimatised as the pure Kyloe; and the same was the case with the Galloways.[2] From the breeder's point of view in-and-in breeding improves the breed because it suppresses those qualities which under the circumstances are useless, and develops those which are useful, whether it be for racing, for wool, for the butcher, or for any other purpose; and without in-and-in breeding he cannot alter an animal to suit his purpose. He selects for breeding, it is true, but the one factor, the factor consanguinity, still remains; while by that means he excludes disturbing factors, such as morbid inheritance, whereby he makes his experiments valuable for our purpose.

[1] Quoted by Waitz, *Anthropologie*, iii. 170, 171.
[2] Macdonald, *Cattle, Sheep, and Deer*, pp. 268, 276.

By in-and-in breeding he could as easily and as certainly breed animals with qualities which would elevate them above their savage brethren were they to rejoin them, as he can breed qualities which improve them for himself. Indeed, it may be said that those qualities in every state of existence which give an animal most chances of life and multiplication are those qualities which improve it; for what else is improvement? It is equally undeniable that, in their present circumstances, our domestic animals are improved for themselves, as well as for the breeder, since they multiply and live, while the others are exterminated.

This very care which he bestows so unsparingly on the selection of his stock is what would have to be done were we to experiment on the effects of blood relationship in marriage undisturbed by other factors, the effects of which we are unable to calculate. An ideal experiment of this sort would be to take a fine and healthy set of people, divide them, and place them under the same conditions of occupation, food, and habitation. Make the smaller lot never marry any but their nearest relations, generation after generation, and the larger never marry anyone related in the remotest degree, selecting in both cases only the most vigorous and healthy. Then note the result of these marriages and compare them. By such an experiment disturbing causes would, as far as is possible, be excluded, and if there were any morbid results, the sole factor which could cause it would be the consanguinity. It is precisely this, though not in so complete a form, that the breeders do; but with the advantage that, since the domestic animals breed faster in proportion to the length of their lives than does man, a closer degree of consanguinity can be obtained from them than could be obtained from him. Nor is selection an unnatural process; for both selection and in-and-in breeding are common to wild animals. Most of those animals which do not pair for life fight for possession of the females; the weakest thus necessarily is unable to breed, while the strongest not only has the advantage of propagating his strength, but in many cases, also, practises polygamy and incest, since he drives away all the young males and keeps the females.

It is manifest, then, that if the question whether consanguineous marriages are harmful through their consanguinity, and not through inheritance (if they are harmful at all), is to be answered, that observations on in-and-in breeding in animals, and these alone at present, are able to do so. Naturally persons with that preconceived notion which everyone is bound to have on this subject who has not studied it, are apt to consider any evil result observed in the course of in-and-in breeding as caused by that kind of breeding, without any previous examination whether there may not be other causes to account for it. It is so in the study of these unions among human beings; and the results obtained from in-and-in breeding in animals, though far more trustworthy than those obtained from consanguineous marriage cases, are not absolutely free from disturbing causes which affect their reliability. In the study of these cases, therefore, as in others, we must remember that one fact showing the harmlessness of in-and-in breeding is worth a hundred tending to show their harmfulness; since in the former the consanguinity is still a factor, but in the latter we are ignorant what other factors may have come into play. Let us now proceed to facts.

M. Allié, says M. Boudin, after a long experience, is of opinion that the system of in-and-in breeding is ruin to sheep. A flock at Petit-Bourg, he says, has diminished greatly in value since it passed into other hands, and this system has been practised.[1] The observations of Stephens lead him to the same conclusion; the progeny, he says, though improved in figure, firmness of bone, etc., are nevertheless delicate skinned, and therefore liable to the attacks of insects, and to inflammation; but this evil is only the result of long-continued in-and-in breeding, and by no means the immediate result.[2] M. Aubé asserts that sheep will produce a dark kind if bred in-and-in, which he explains as a step on the road to albinoism.[3] While 'Mr. Giblett, of Bond Street,' quoted by Walker, asserted that sheep bred in-and-in on Bakewell's principle are

[1] Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 520.
[2] Stephens, *The Book of the Farm*, ii. 584.
[3] Aubé, *Bullet. de la Soc. Imp. Zool. d'Acclimatation*, iv. 513.

fitter for the tallow chandler than for the kitchen,[1] which is very likely true, but has nothing to do with consanguinity.[2]

On the other hand, M. Beaudouin gives the following account of a flock of 300 merinoes bred in-and-in for a period of twenty-two years; the animals originally came from Saxony, were renowned for the purity of their blood, and had only been a few years in the Côte-d'Or when, in 1840, he commenced his observations. At that time, though suffering from no particular disease, the sheep were labouring under general debility, seemingly attributable more to a want of acclimatisation than to anything else. He began by a little judicious selection, eliminating about 15 per cent. yearly, and the flock soon became remarkably strong and healthy. There was no sensible sterility; altogether, perhaps, the cases of cryptorchis and monorchis were not more that 6 per cent., while in the females there were even fewer cases of barrenness. Cases of duplicate organs were about 5 per cent.; and in 1859, a year when these cases were unusually frequent in all the flocks about, there were as many as 7 per cent. in his. The sexes were produced in nearly equal numbers, and cases of miscarriage were not more numerous than among the neighbouring flocks. Far from degenerating, they became finer and far more to be depended upon to reproduce their proper type than is ordinary in flocks which are crossed. During the twenty-two years there was one instance of the birth of a Mauchamp sheep, which is a very rare occurrence. He concludes with the declaration that, in his belief, in-and-in breeding, combined with a moderate amount of selection, has no evil effect.[3] Close interbreeding, says Mr. Darwin, has perhaps been as long continued with sheep as with cattle; but perhaps the nearest relations have not been so frequently matched. Messrs. Brown, during fifty years, have never crossed their excellent flock of Leicesters, nor since the year

[1] Walker, *On Intermarriage*, p. 335.

[2] Too much attention is given by most breeders to the fat-getting qualities of animals, in consequence of the prizes offered at cattle shows being generally bestowed on the fattest beasts (see p. 264 of this work; and Macdonald, *Cattle, Sheep, and Deer*, pp. 258 260).

[3] Beaudouin, *Comptes Rendus*, 1862, lv. 236-238.

1810 has Mr. Barford crossed the Foscote flock. This gentleman asserts that when two nearly related individuals are perfectly sound, no degeneracy is produced in their offspring by their union; or, in other words, that there is no danger in in-and-in breeding unless through morbid inheritance. But, on the other hand, he does not pride himself on breeding from the nearest relatives; and I may add that such is not a breeder's object: he does not choose a relative for its relationship, but for its qualities. In France the Naz flock has been bred in-and-in for sixty years, without the introduction of any strange blood.[1] Ferdinand and Louis Fischer started a flock of 100 ewes of one family, and four rams of another; and these families have since been interbred without the admixture of a drop of fresh blood. Mr. Atwood's entire flock, which was so celebrated that it is now scattered by colonisation into all the States of the North American Union, originated from a single impregnated ewe; and neither she nor any of her progeny or descendants while in his hands was interbred with any sheep not descended exclusively from Colonel Humphrey's flock, from which she herself came. Mr. Hammond bought a small number of Atwood's flock in 1844, and he has since interbred solely between the descendants of these identical sheep. The Spaniards, in their sheep-breeding, guard against any admixture between the different cabanas, and they have been bred in-and-in for ages.[2] Hallam says that the fineness of Spanish wool is considered to be owing to an importation of English sheep about the year 1348, and again about 1465, in return for which the Spaniards exported horses.[3] M'Culloch says that the Spaniards themselves ascribe their superior breed of sheep to the introduction of a few from England by Catherine of Lancaster in 1394; while elsewhere he says the merino breed is said to have been introduced from Barbary.[4] These importations could not have been very great, and it appears that the Spaniards have since

[1] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. 98, 99.
[2] Randall, *Fine Wool Sheep Husbandry*, pp. 108, 115.
[3] Hallam, *Middle Ages*, ii. 386, note.
[4] M'Culloch, *Geographical Dictionary*, arts. 'Spain' and 'Tunis.'

bred them in very closely, with the result that they became so valuable that, up to the treaty of Basle, their exportation was forbidden. By that treaty the French were allowed to buy 5,000 merino ewes and as many rams; and from this stock the English sheep, which had also been carefully bred, were improved, while those of France and Germany were almost replaced by them.[1] In the former country a flock of 334 ewes and 22 rams was established at Rambouillet. The flock was continually bred in-and-in, but no particular selection was practised until nearly a hundred years later. Then the pedigrees were established, and, though nominally brother and sister, and parent and child, were not paired as a rule; yet if there was any superiority in any particular animal, no relationship was regarded. No evil has ever resulted from this, in the opinion of the director, M. Bernardin.[2] M. Leroy, the winner of many prizes as a sheep-breeder, informed M. La Perre that once having got his flock to his satisfaction, he intends to breed in-and-in. MM. Camus and Cugnot also occasionally crossed their flocks, not on account of any degeneration, but to improve away faults of form or wool. M. Thirouin's flock of merinoes has had one cross about every ten years during the forty years it has existed. M. Noblet, for the first twenty-five years, crossed his flock to improve their meat, with the result that they diminished in weight. For the last fifteen years he has not crossed the flock, and has found no evil results followed. M. Conseil-Lamy's flock was created in 1816, and for the last sixty years has not been crossed, except from other flocks derived from his own when he saw in any of them a particularly fine ram. During this time he has paid no attention to nearness of blood, but has always bred from the best animals.[3] The merino, when introduced into Germany, was so immensely superior to all the native breeds that it was everywhere accepted with enthusiasm. In Saxony the greatest attention was paid to them, chiefly, however, as regards the *quality* of their wool, not as regards the quantity and quality, as well as

[1] M'Culloch, *ut sup.* art. 'Castile.'
[2] La Perre de Roo, *La Consanguinité*, etc. pp. 140, 141.
[3] *Ibid.* pp. 143–155.

the quality of the meat, as in England. To this end they were kept in stables and fed on heating food, such as corn and hay, throughout the winter. The result is an unexampled quality of wool, but the animals have become a small and puny race. In England the breed of sheep was already so good that men were prejudiced in favour of their own breeds. Many merinoes, therefore, fell into the hands of men who had no experience in breeding, and they were mismanaged; but 'in the hands of at least one practical breeder they were, however, eminently successful. He reports on them: "Soon after the king's flocks were imported, * * * I purchased a considerable number of sheep from them, and selected from those of the Negrette blood, as being the largest sheep, and carrying the most and softest wool. These I continued to keep strictly pure, having no other sheep whatever, and I drew rams from the royal flock, so long as that was kept up; since which I have depended wholly on my own. By due attention in breeding, the wool, far from degenerating, has annually improved in softness and fineness, and these qualities have become much more uniformly even throughout the fleece; so that I now obtain for the whole a price beyond what any foreign wool brings in bulk in an unsorted state, whilst the fleeces of [my] own flock are full double the weight of those of the Saxon sheep. It is right, however, to state that the staple of my flocks having arrived at a length beyond that of other Merino sheep, has rendered it fit for combing, thus enhancing the value. The form of the sheep is also highly improved, whilst the disposition to fatten equals that of the Southdown. The mutton is of the first quality, and I can readily have for the fat wethers the highest price which any mutton brings in the London market."'[1] The justly celebrated New Leicester breed of sheep was entirely created as a distinct breed by this method. 'Taking the native sheep,' says Mr. Macdonald, talking of Bakewell, 'he reduced his size, gave him small offals, induced him to lay on flesh and fat all along the breech, sides, shoulders, flank, and neck. He opened his wool, and also reduced it in weight, and a little in length. He increased the

[1] Macdonald, *Cattle, Sheep, and Deer*, pp. 351-353.

tendency to lay on fat in proportion to the food consumed, and made the animal take on fat at least a year or two earlier ; thus enabling two or three animals to be fed where one only was fed before. Nor was this change fitful or temporary ; it was permanent and indelible ; and, for nearly a century, the same breed of sheep has not only maintained its position, but has been used with more or less success to improve nearly every breed in the United Kingdom, and has, moreover, more or less, displaced almost every other breed.'[1] A correspondent of Walker's says: 'I have bred from rams from the same flock in Leicestershire, for fourteen years, which flock has not had a cross since the year 1799.' Some of the new Leicester breed appear, however, to deserve the remark of the 'Bond Street Butcher' ; for Sir John Sebright said that Bakewell's principles were followed up too far ; the propensity to get fat has increased so much that their stock has become small in size, delicate, and produces little wool. But another correspondent of Walker's points out that a propensity for fat-getting and the production of the finest wool are incompatible ;[2] and it certainly appears from the fact that this breed has supplanted so many others that it cannot have degenerated. Too much fat is always a danger to a breed, for fat is a degeneration of tissue and a cause of sterility ;[3] and, although by in-and-in breeding man is able to do a great deal in the way of alteration, he must still follow Nature ; he cannot go contrary to physiological laws ; he can increase the qualities which he wishes to get, but often only at the expense of qualities which he is content to do without ; and can no more obtain an animal all fat with every other good quality than he can teach his breed to live without food. We must remember that ill-directed breeding is as bad when there are frequent crosses as when there are none ; that it is selection which is the great improver, when properly directed, and that breeding

[1] Macdonald, *Cattle, Sheep, and Deer*, p. 446. At p. 415, however, Mr. Macdonald says : 'The Leicester was notoriously a cross of various breeds in the first instance, although the success which supplied the cross is a secret buried in the "tomb of the Capulets."' At p. 447 he says : 'It is not so clearly known what was the parent stock, though it is generally supposed to have been the Old Leicester.'

[2] Walker, *On Intermarriage*, pp. 236, 295, 351.

[3] See p. 200 of this work.

in-and-in is only advantageous because it fixes the breed, and obviates the necessity of crossing from an unimproved breed. Indeed, a careless cross may diminish size—a charge against in-and-in breeding—just as in-and-in breeding under the same circumstances may do so. The Romney Marsh sheep were made smaller in this way ; so were the Teeswater ; and so are the mongrels of the Merino and Scotch, or the South-down and Scotch breeds.[1] The sheep of Shetland, says Dr. Copland, are very small,[2] their fleeces fine and soft, their meat delicate and finely flavoured. In many parts they have much deteriorated since the introduction of south-country breeds,[3] which were introduced to increase their size ; for none of the crosses proved successful although many were tried. Indeed, the sheep themselves seem sometimes to have an anti-pathy to crosses, for Marshall relates that a flock of heavy Lincolnshire and light Norfolk sheep which had been bred together on a large sheep-walk, part of which was low, rich, and moist, and another part high and dry, when turned out, separated from each other, the heavy sheep drawing off to the rich soil, the Norfolks to the dry ; so that whilst there was plenty of grass 'the two breeds kept themselves as distinct as rooks and pigeons' ; and, on one of the Faroë isles, it was observed that the half-wild native black sheep would not readily unite with imported white sheep.[4] So bad are the effects of crossing an improved breed, which must necessarily comprise no very great number at first that some persons keep their animals

[1] Macdonald, *Cattle, Sheep, and Deer*, pp. 462, 478, 483.

[2] Animals living on islands are said to be frequently small breeds because they are bred in-and-in. But although the fact is true, the alleged cause cannot be, since there are in many other and unisolated parts of the world also small breeds of the domestic and other animals. Thus, there are small breeds of horses in Ladakh, India ; in Morbihan and Lorraine, France ; in Servia ; in the Szekler Mountains, Transylvania ; in Finland ; in Galicia ; and in Sweden : there are small breeds of cattle in Kumaon, India ; in Manchooria ; in Tunis ; in the department of Isère ; in Unterwalden ; and in Sweden : and there are small breeds of sheep in Ladakh, in Manchooria, in Thibet, and in Hanover, etc. (M'Culloch, *Geographical Dictionary*). Even had we not these facts, we should have no right to attribute any dwarfishness of island breeds to consanguineous unions among them, when the probability is that small stature, when not directly inherited, is due to hard work and poor food (Godron, *De l'Espèce*, etc. i. 17, 18 ; ii. 286-294).

[3] Walker, *On Intermarriage*, pp. 349, 351 ; Macdonald, *Cattle, Sheep, and Deer*, p. 529.

[4] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. pp. 80, 81.

in different families, and thus, while they retain consanguinity, any tendency to disease peculiar to one family from the soil, habit, or what not, is obliterated. On the other hand, so valuable is in-and-in breeding to perpetuate any peculiarity either caused by selection, or by what is known as a 'sport,' that nearly all 'created' breeds have been produced in this way, and valuable breeds, such as the Ancon and Mauchamp, would have been entirely lost without it.

A majority of the most celebrated breeders and improvers of English cattle, says Mr. Randall, have bred closely in-and-in;[1] and this was necessary, as I have already pointed out, since an improvement cannot comprise a large number at first. Bakewell was one of these breeders, and his longhorns were for a considerable time closely interbred, though Mr. Youatt says that they at last became delicate, and the propagation of their kind uncertain;[2] a state which seems to have been due to bad management, for Bakewell himself was, as a rule, extremely successful. Knight once in the same season reared two young bulls of which the parents were nearly related; and both proved perfectly impotent, or at least failed to beget a single calf; yet the females bred well enough while young. But another correspondent of Walker's never found the generative power fail in consequence of in-and-in breeding of cattle; all that is necessary, he says, is to select carefully.[3]

The half-wild cattle kept in British parks, at Blair Athole (now removed to Kilmory), at Cadzow Castle, Chartley, Chillingham, Lyme Park, and Somerford Park, are instances of continued in-and-in breeding from time immemorial, and still exist. There were other herds at Ardrossan, Auchencruive, Barnard Castle, Bishop Auckland, Burton Constable, Drumlanrig, Ewelme Park, Gisburne Park, Hoghton, Holdenby Park, Leigh Court, Middleton Park, Naworth Castle, and Wollaton Park; all of which are now extinct, some from causes which have not been recorded; in six places from having been killed off; in one, Middleton, from having been

[1] Randall, *Fine Wool Sheep Husbandry*, p. 117, note.
[2] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. 96.
[3] Walker, *On Intermarriage*, pp. 228, 229, 238, 239.

merged into a domestic race; and in three, namely, Burton Constable, Gisburne Park, and Wollaton Park, from causes alleged to have been due to in-and-in breeding. Some high authorities hold that they are derived from the *Bos primigenius*, but Professor Owen and Dr. J. A. Smith consider that that animal became extinct in prehistoric times; at any rate, if they were derived from *Bos primigenius* it is probable they originated from him only indirectly. At Cadzow Castle there were in October 1874, 45 head of cattle, which had increased to 56 in June 1877. At Chartley the average number kept was 30; but in 1851 there were 48; in 1873, 27; in 1874, 25; in 1877, 20. At Chillingham there were in the year 1692, 28 head; in 1838, about 80; in 1861, about 50; in 1863, about the same number; in 1873, 64; in 1874, 71; in 1875, 62; in 1877, 59. Lord Tankerville says they increase slowly, several dying each year by accidents, or by overrunning their calves when disturbed; and the cows breed slowly, as calves are frequently not weaned until after two years. At Lyme Park there were in 1817 about 20 head; about 1850 there were 34, from which number they gradually dwindled to 4 in 1875, and increased to 6 in 1877. This diminution has of course been attributed to in-and-in breeding, but it appears that foot-and-mouth disease had much to do with it in killing some and impairing the fertility of others. Moreover, the mistake was made at one time of keeping only one bull, which proved infertile. The cattle at Somerford Park are of the same kind as those which were at Middleton; no record has been kept of their numbers at various periods, but in 1875 there were 20 head. At Middleton they came through inheritance to be divided, some died out, and others were crossed with shorthorns; but there is a strong tendency among these latter to revert to the wild type which have so long been bred in-and-in. At Burton Constable the herd had died out from 'a distemper' in 1785, about. At Gisburne Park the herd, seldom numbering even 10 head, were a part of the Whalley Abbey herd. An attempt was made about the year 1810 to cross the breed with tame cattle, and also with a cow from Lyme, but it did not succeed. In 1859 there

was only one bull, a cow, and a calf left, and they were got rid of. The Wollaton Park herd became extinct between 1800 and 1835, owing to fourteen out of them having died from eating dead branches cut from trees near the house, and since the survivors (the number of which is not given) refused to breed they were all killed.[1] Nearly all these herds distinctly vary from each other in build, horns, or colouring; and it is most remarkable that herds which have always been kept at so small a number should not all have died out long ago: an accident, like that at Wollaton; a distemper, like those at Lyme and Burton Constable, errors in the selection, like those at Lyme and Gisburne, must nearly always prove fatal to the existence of the herd. On the other hand, that such small numbers should have bred from time immemorial is the most striking and searching proof that in-and-in breeding, when moderately protected by selection, natural or otherwise, as is invariably the case with ordinary breeding, is not dangerous.

The South American cattle are all descended from a few brought over from Spain and Portugal; the first by Garay in 1580,[2] and they have since increased to such astonishing numbers that, even in 1587, there were 64,350 skins exported from New Spain. Vast herds of wild cattle are met with in all parts of the country, particularly in the plains of the southern provinces, where they exist in troops of 20,000 to 40,000; so that hides, jerked beef, horns, and bones have long formed, and still form, leading articles of export from Brazil. St. Domingo was also furnished with cattle by the Spaniards, and only 100 years after their first importation the French found them in such quantities on the island that the most reckless slaughter seemed to make no impression on their numbers.[3] On the Falkland Isles there are herds of magnificent cattle, all descended from a few brought over from La Plata about eighty or ninety years ago. They are

[1] Harting, *British Animals Extinct within Historic Times*, 1880, pp. 216–247.

[2] Or, according to M. Godron, in 1550 (*De l'Espèce et des Races*, i. 426, 427).

[3] M'Culloch, *Geographical Dictionary*; Waitz, *Anthropologie*, iii. 494, note; Godron, *De l'Espèce*, etc. i. 428.

now breaking up into separate herds of different colours, the white, on the highlands, breeding usually earlier than the others.[1] I wish to draw particular attention to this natural segregation, which is also common in horses and sheep,[2] and must be taken in connection with the tendency all polygamous animals seem to have to separate into families. Is this Nature's horror of in-and-in breeding? Is this her delight in crosses? Two bulls and five cows which escaped from the early colonists of Sydney in the year 1788 were found in 1795 to have multiplied to sixty individuals. In 1796 there were ninety-four. In 1797 *they divided into two troops*, one of sixty-seven, the other of one hundred and seventy individuals.[3]

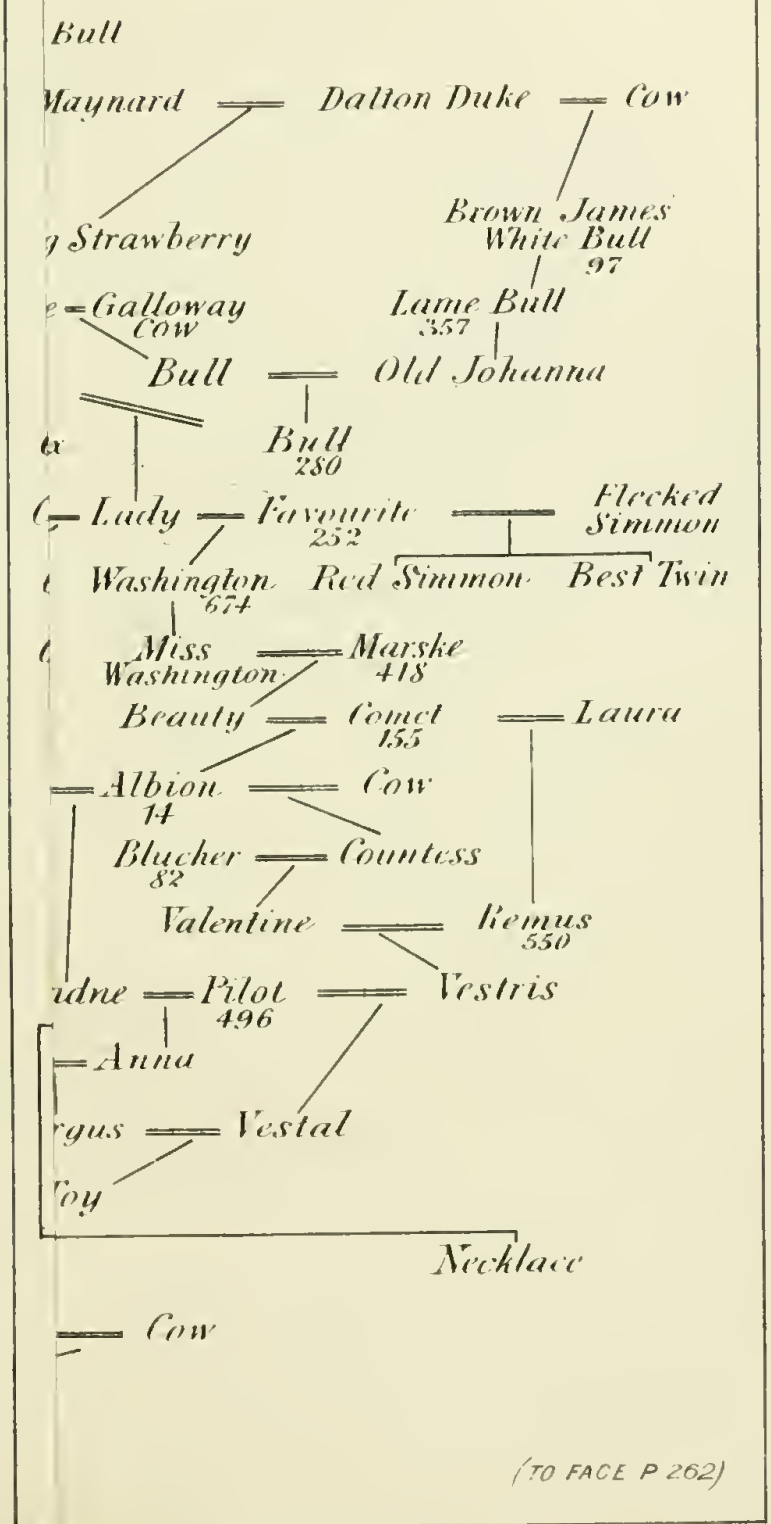
Price, the most successful breeder of Hereford cattle on record, until twenty years ago, was a staunch advocate of in-and-in breeding; so were the Collings, Mason, Maynard Wetherill, Bates, the Booths, Sir C. Knightly,[4] Bakewell, Culley, Elman, etc.[5]

The Shorthorn race are practically all descended from Hubback, and the table of some of their pedigrees shows that they were bred in-and-in to a degree impossible in any slower breeding animal. Messrs. Colling, from whose stock all the others are derived, bred closer than any other breeder, and the cross with the Galloway cow was not intentional.[6] The blood thus introduced was always carefully avoided by Bates, who restricted himself to that of Hubback and Favourite. 'On this I have ever acted in my breeding of shorthorns, and to this is owing, *entirely*, my success,' he says;[7] 'wherever I have in the least deviated therefrom, I immediately saw my error and parted with the produce, not breeding from them again.'[8] In the Booth herds, crosses were also very sparingly resorted to, and then rather 'in conformity with the general practice of cattle-breeders of that day, who seemed,

[1] Darwin, *The Variation*, etc. 1875, ii. 80.
[2] See pp. 257, 267 of this work; also an instance in dogs, p. 275.
[3] Godron, *De l'Espèce et des Races*, i. 428, 429, note 4.
[4] Randall, *Fine Wool Sheep Husbandry*, p. 117, note.
[5] Walker, *On Intermarriage*, p. 239.
[6] Bell, *Improved Shorthorn*, p. 100.
[7] *Ibid.* p. 41. [8] *Ibid.* p. 53.

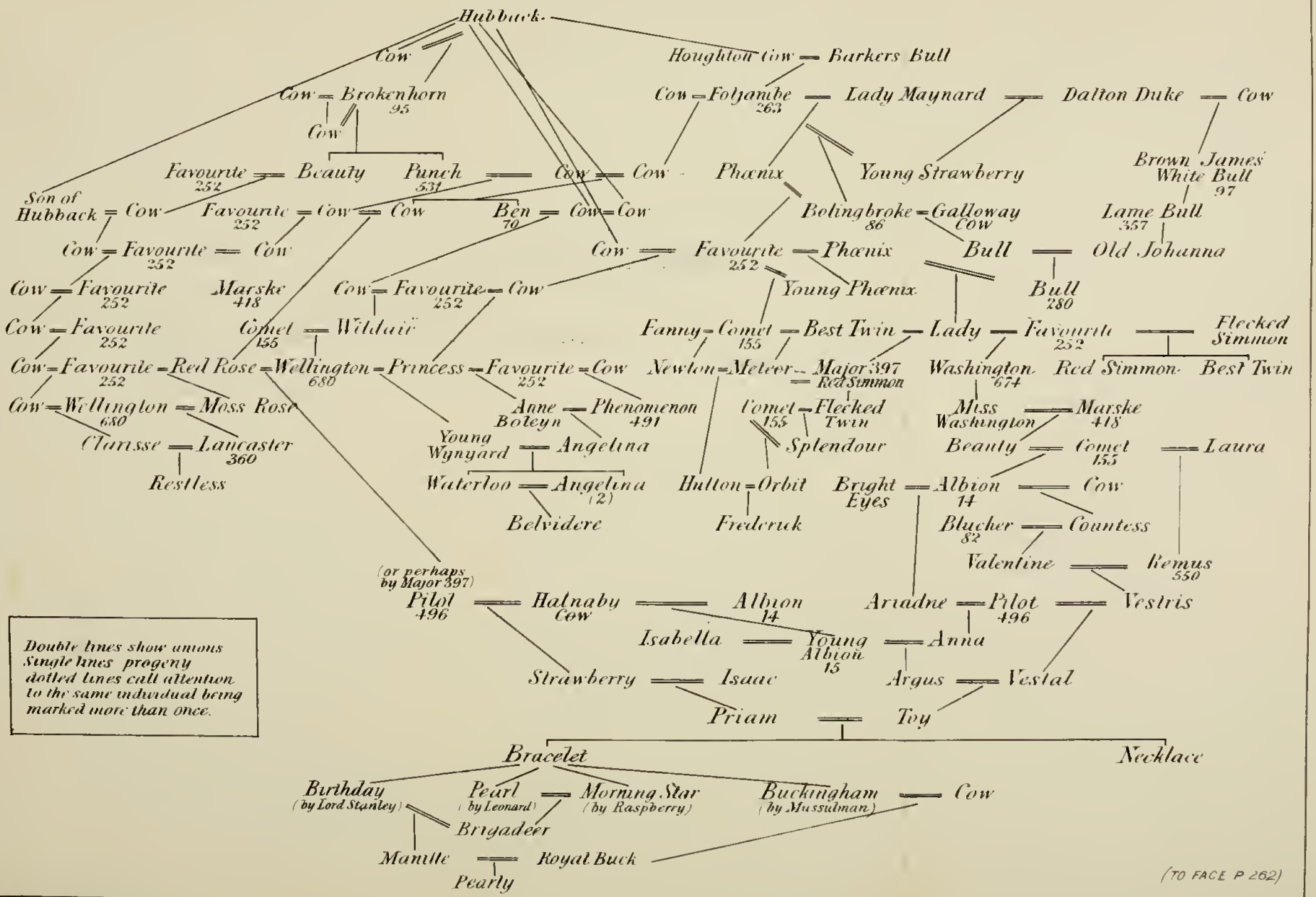
to think it a matter of course to effect, at certain intervals, some change or renewal of strain in their stock.'[1] No alien blood, says Mr. Carr, has ever been used *throughout* the herd.[2] Nevertheless all these breeders seem to have felt the necessity for an occasional change, not through animals of different blood, but through animals of different habitats. Of the crosses, for instance, used by Mr. J. Booth, Mussulman, who appears low down in the subjoined pedigree, was sixty-four times descended from Favourite; Lord Lieutenant was descended 106 times from Favourite; and Matcham fifty-two times. Crown Prince was descended 1,055 times from Favourite, and Red Rose by Harbinger 1,344 times; so that the produce of the two are descended from him 2,399 times.[3] A writer in the 'Mark Lane Express,' quoted by Mr. Carr, says: 'Some time ago, accepting the then prevalent notion that the Warlaby herd would derive benefit from fresh blood, I ventured to suggest to Mr. Booth the expediency of adopting a cross, when I was met by arguments to the following effect: "Have any of the evils which are usually attributed to in-and in breeding manifested themselves in my herd? Is there any degeneracy in size, substance, or vigour in the animals? any tendency to premature age? any lack of milking or thriving disposition in the cows, or of capacity of frame, or hardiness of constitution? Are the bulls (with one or two exceptions, such as must occur in every herd) deficient in masculine character and efficacy, or the sires of a puny or feeble offspring? or do they early become worn out and unfruitful? and lastly, is there any tribe of Shorthorns that attains a higher or even the same degree of condition on the same food?" All of which questions it being impossible to answer otherwise than in the negative, Mr. Booth added, "Because, if not, it is clear that the only consideration that would justify me in having recourse to a cross would be the discovery of a tribe which, besides possessing in an equal degree with my own the qualities we have mentioned, are superior to them in utility and symmetry." "Granted," I replied. "Where is

[1] Carr, *History of the Rise and Progress of the Killerby, Studley, and Warlaby Herds*, p. 39. [2] *Ibid.* p. 38. [3] *Ibid.* p. 40.


Bull
Maynard
Dalton Duke
Cow
Strawberry
Brown James
White Bull
97
Galloway
Cow
Lame Bull
357
Bull
Old Johanna
Bull
280
Lady
Favourite
252
Flecked
Simmon
Washington
674
Red Simmon
Best Twin
Miss
Washington
Marske
418
Beauty
Comet
155
Laura
Albion
14
Cow
Blucher
82
Countess
Valentine
Remus
550
Pilot
496
Vestris
Anna
Vestal
Necklace
Cow

(TO FACE P 262)

SOME PEDIGREES OF SHORTHORNS COMPILED FROM COATES' HERD BOOK.


Hubback
Cow
Houghton Cow = Barkers Bull
Cow = Brokenhorn 95
Cow
Cow = Foljambe 263
Lady Maynard
Dalton Duke = Cow
Favourite 252 = Beauty
Punch 531
Cow = Cow
Phœnix
Young Strawberry
Brown James' White Bull 97
Son of Hubback = Cow
Favourite 252 = Cow = Cow
Ben 70 = Cow = Cow
Bolingbroke 86 = Galloway Cow
Lame Bull 357
Cow = Favourite 252 = Cow
Cow = Favourite 252
Favourite 252 = Phœnix
Bull = Old Johanna
Cow = Favourite 252
Marske 418
Cow = Favourite 252 = Cow
Young Phœnix
Bull 280
Cow = Favourite 252
Comet 155 = Wildair
Fanny = Comet 155 = Best Twin = Lady
Favourite 252 = Flecked Simmon
Cow = Favourite 252 = Red Rose = Wellington 680 = Princess = Favourite 252 = Cow
Newton = Meteor = Major 397 Red Simmon
Washington 674
Red Simmon = Best Twin
Cow = Wellington 680 = Moss Rose
Anne Boleyn = Phenomenon 491
Comet 155 = Flecked Twin
Miss Washington = Marske 418
Clarisse = Lancaster 360
Young Wynyard = Angelina
Splendour
Beauty = Comet 155 = Laura
Restless
Waterloo = Angelina (2)
Hutton = Orbit
Bright Eyes = Albion 14 = Cow
Belvidere
Frederick
Blucher 82 = Countess
Valentine = Remus 550
(or perhaps by Major 397)
Pilot 496 = Halnaby Cow = Albion 14
Ariadne = Pilot 496 = Vestris
Isabella = Young Albion 15 = Anna
Strawberry = Isaac
Argus = Vestal
Priam = Toy
Bracelet
Necklace
Birthday (by Lord Stanley)
Pearl (by Leonard)
Morning Star (by Raspberry)
Buckingham (by Mussulman) = Cow
Brigadeer
Manille = Royal Buck
Pearly
Double lines show unions
Single lines progeny
dotted lines call attention
to the same individual being
marked more than once.

(TO FACE P 262)

Johnstwoode & Co Lith London

it ?" was the pertinent but perplexing rejoinder. "The result of the last three crosses upon which I ventured," continued Mr. Booth,—"Water King, Exquisite, and Lord Stanley, has made me distrust the policy of any further step in that direction ; nor have the results I have witnessed of the experiments of others in crossing animals of my blood with the most fashionable bulls of other strains tended in any instance to remove that distrust."'[1] Mr. Carr, however, considers that Exquisite, at least, was used without Mr. Booth's usual judgment, because he at one stroke infused too much fresh blood.[2] Mr. Darwin says that Nathusius, after a careful study of pedigrees, declares that no breeder has continued in-and-in breeding all his life.[3] But, at all events, many have bred in-and-in far more closely than would be possible in man, for a number of generations longer than the average of human families exist.

There seems indeed to be a danger in breeding any family in-and-in that should an unusual number of males be produced that tendency is gradually intensified until the females become too few, and this of course is always likely to happen sooner or later. A tendency to breed females would have no effect, because very few males are requisite. When, however, the see-saw of events does produce the tendency to male progeny for a time, the usual accidents of breeding begin to tell upon the diminished herd, and an animal from a herd not so affected becomes necessary. There was such a tendency in the Bates herd at Kirklevington ;[4] and Mr. Carr says that the Warlaby herd had a most destructive tendency to breed bulls ; but the crossing of the Charity tribe did not prevent that branch from disappearing. 'Charity was a daughter of Buckingham (half Craddock's blood), and granddaughter of Leonard (half Raine's) ; and of the three daughters of Hawthorn Blossom which failed to breed, Rose Blossom and Orange Blossom were by sons of Buckingham and their dams by Leonard ; and Peach Blossom was by Water King (half Bates), and her

[1] Carr, *ut sup.* pp. 127, 128.
[2] *Ibid.* p. 51.
[3] Darwin, *The Variation*, etc. 1875, ii 97.
[4] Bell, *Improved Shorthorn*, p. 351.

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[1] Carr, *ut sup.* pp. 127, 128.
[2] *Ibid.* p. 51.
[3] Darwin, *The Variation*, etc. 1875, ii 97.
[4] Bell, *Improved Shorthorn*, p. 351.

dam and grandam by Buckingham and Leonard.' Both Mr. Wood and Mr. Carr believe that the chief cause of animals ceasing to breed is the fattening that all show animals have to undergo. Nearly all of the Blossom family were thus 'trained,' and the greater proportion of prize animals do not breed at all. Yet the unforced animals of the herd were 'so prolific that no less than six cases of twins occurred at Warlaby in the first four months of 1864, in every instance the sire being a Warlaby bull, and in four cases the dams pure-bred Shorthorns.'[1] Mr. Price, whose Herefords were the best in the world in his day, declared he had not gone beyond his own herd for a bull or a cow during forty years.[2] M. Sanson points out that the Charolaise race of cattle has been greatly improved by in-and-in breeding; and that the small Bretton race of Morbihan, so celebrated for its milk and butter, are usually propagated in this way.[3] At Rambouillet in-and-in breeding was practised among the celebrated cattle of that place, a white hornless breed, with great success until they were carried off by the cattle epidemic of 1815. M. Huzard also saw at Hohenheim, in Wurtemberg, and the royal farm of Holitsch, in Hungary, herds of superior animals which were always bred in-and-in.[4] In this way, says Mr. Darwin, were, in all probability, bred the Niata cattle, from one individual 'sport.'[5]

Earl Fitzwilliam keeps a herd of about a dozen Indian buffaloes, which *have* been crossed from Lord Derby's stock, but are also bred in-and-in very closely. These are exceedingly healthy.[6]

The eland, first acclimatised in England by the late Lord Derby between the years 1835–1851, at his menagerie at Knowsley, has been closely bred in-and-in. They were bequeathed to the Zoological Society in 1851, at which time there were two males and three females; and since then they have regularly reproduced without the loss of a single calf.[7]

[1] Carr, *ut sup.* pp. 90, 91, 94, 109. [2] Randall, *Fine Wool*, etc. p. 118, note.
[3] Sanson, *Comptes Rendus*, 1862, lv. 123, 124.
[4] Huzard, in the *Ann. de l'Agriculture Française*, 5th series, ix. 502.
[5] Darwin, *The Variation*, etc. 1875, ii. 409.
[6] Macdonald, *Cattle, Sheep, and Deer*, p. 231. [7] *Ibid.* p. 233.

At Fitzroy (Falkland Isles), near Mare and Island Harbours, was, and is now probably, a herd of guanaco, numbering some twenty individuals, all sprung from a couple brought over as a present to the governor. For a long time they were kept in a paddock, but at last they were given to their present owner, Captain Packe, on account of a nasty habit they had of spitting at passers-by. Captain Packe removed them to the neighbourhood of Fitzroy; where, though necessarily bred in-and-in, they have thriven and multiplied.[1]

Breeders are more unanimous on the evils of in-and-in breeding of pigs, says Mr. Darwin, than perhaps of any other large animal. Mr. Druce says their constitution cannot be preserved without a cross. Lord Weston, the first importer of a Neapolitan boar and sow, bred in-and-in till the breed was in danger of dying out. Mr. J. Wright bred with the same boar from its daughter, granddaughter, great-grand-daughter, and so on, for seven generations; with the result that the offspring in many cases failed to breed, in others they produced few that lived, and of the latter many were idiotic without instinct to suck, and unable to walk straight. The last two sows were put to other boars, and produced several litters of healthy pigs. The best in external appearance produced during the whole seven generations was one of the last births, the sole one of the litter. She would not breed with her sire, and yet bred at the first trial with a stranger in blood. Nathusius imported a gravid sow from England, and bred closely in-and-in from the progeny for three generations, with bad results; yet he esteemed one of the latest sows a good animal, and she bred well with a boar of different blood.[2] Colonel Le Couteur, who has done much for the agriculture of Jersey, wrote to Mr. Darwin that he had bred in-and-in from a fine breed of pigs in his possession, twice pairing brother and sister, but nearly all the young had fits, and died suddenly.[3] The late Sir Francis Darwin in 1826

[1] *The Field*, April 8, 1871, p. 282.
[2] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. 101.
[3] *Ibid.* note 23.

had presented to him a German red boar, two Alpine black boars, and two sows. The red boar was too fierce to be kept, but before he was killed a cross was obtained with the black sows, and ever afterwards red and black progeny were produced. The black boars and sows were turned out in about two hundred acres of wood, and their descendants degenerated in size, seeming also to become tame and spiritless. The last was shot in 1837.[1] On the other hand, the pigs turned out by Captain Cook have ever increased immensely. On the whole, Mr. Darwin thinks, therefore, that in-and-in breeding does not affect the external form, while it affects the general constitution, the mental powers, and especially the reproductive powers. It must be remembered, however, that pigs are precisely those animals which are cultivated most for their fat, and that fat is very injurious to the health of any animal, and especially to the reproductive powers. Crossing, on the other hand, gives a tendency to reversion, and therefore a relief from fat. Indeed, as I have already explained, facts against the harmlessness of in-and-in breeding have very little value compared with those in its favour, and this is too generally overlooked. Thus pigs with but little hair on their bodies have by correlation also very bad teeth, and this may be prevented by crossing with hairy breeds.[2] If a breeder, in beginning to breed in-and-in, chose an animal with rather less hair than usual, the progeny would have a tendency to bad teeth, bad digestion, and hence weakness; and he would naturally conclude, on finding that this weakness was cured by a cross, that it was the in-and-in breeding itself which had caused it, and not mere inheritance. That the great breeders who are far more familiar than ordinary men can be with the causes which are likely to interfere with the fertility of their animals are not likely to have overlooked these, as Mr. Darwin observes,[3] is no doubt true; but breeders cannot very well help themselves, for they *must* breed for flesh and fat. Nathusius observed that the most varied races of pigs when

[1] Harting, *British Animals Extinct*, etc. pp. 98 100.
[2] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. 319, 320
[3] *Ibid.* p. 102.

cultivated became alike; a result, says Mr. Darwin, due 'partly to man breeding the pig for one sole purpose, namely for the greatest amount of flesh and fat; so that selection has always tended towards one and the same end. With most domestic animals the result of selection has been divergence of character, here it has been convergence.'[1]

Mr. Hobbs divided his stock into three families, and by this device, though he kept the consanguinity, he avoided any chance inheritance of a morbid tendency, and obtained more latitude for selection. Mr. Coate, who won the prize for the best pen of pigs at Smithfield Club Show five times, says: 'Crosses answer well for profit to the farmer, as you get more constitution and quicker growth; but for me, who sell a greater number of pigs for breeding purposes, I find it will not do, as it requires many years to get anything like purity of blood again.'[2] So Mr. Youatt says: 'A useful pig in these days may easily be bred; but if you want fixity of type, or, as it is well called, "character," you must adopt pure blood.' Red pigs are 'invaluable for giving vigour and constitution to black breeds, when demoralised by over-coddling, over-feeding, and injudicious in-and-in breeding.'[3]

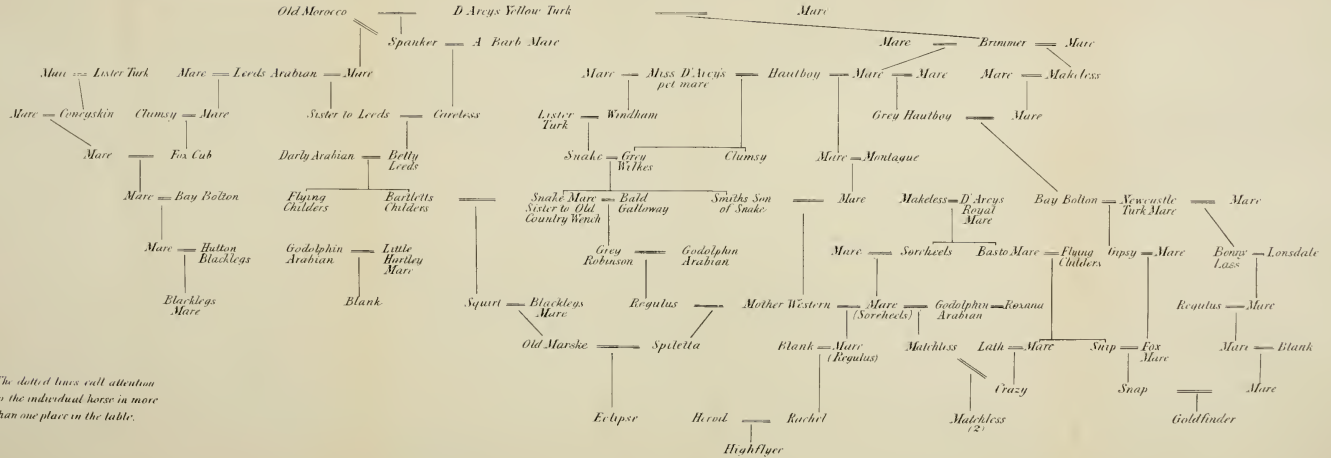
In Circassia there are six sub-breeds of horses, three of which are asserted by a native proprietor of rank, almost always to refuse to mingle and cross whilst living a free life, and will even attack each other.[4] It is a crime punishable by death to forge the mark of pedigree on an animal.[5] All the Arab horses are supposed to be derived from one original stock, the Keheylch, which in course of time have become subdivided into five great strains—the Keheylan, Seglawi, Abéyan, Hamdáni, and Hádban; and sixteen other breeds with sub-strains. Inch for inch, says Mr. Blunt, the Arabian is much the fastest horse; the boldest jumper in the world, though unaccustomed to it; he never loses heart or condition, though poorly fed and hard-worked; they go for immense

[1] Darwin, *ut sup.* i. 77.
[2] *Ibid.* ii. 101, 102.
[3] Youatt, *On the Pig*, pp. 6, 7.
[4] Compare Aristotle, *Hist. Anim.* vi. xvii. 7.
[5] Darwin, *The Variation*, etc. 1875, ii. 80.; M'Culloch, *Geographical Dictionary*, art. 'Circassia.'

distances exposed without shelter to the hot sun by day and bitter wind at night. Nowadays, however, the herds are diminishing, partly on account of the introduction of firearms, which makes a swift horse of less consequence to the warrior, partly to the great number of stallions sold, and partly to the greed of the Turks, who have now got a greater hold over the wild Arabs than was formerly the case.'[1] Mr. N. H. Smith, long a resident among the Arabs, quotes with approval the opinion of an experienced friend that colts bred in-and-in 'show more blood in their heads, are of better form, and are fit to start with fewer sweats than are others; but when the breed is continued incestuous for three or four crosses,' then he apprehends (but it is merely an opinion) that 'the animal degenerates.' 'I cannot take upon me,' he adds, 'to say how often an incestuous breed may be carried on before a degeneracy takes place, as I am not aware of that being the case, in any instance, and experiment is in favour of breeding from son and mother, and father and daughter.' His favourite method of breeding he describes as once in and once out; but then he considers that putting a mare to 'the same stallion that got her dam, or as near his blood as you can meet with,' is breeding *out*.[2] Our racehorses are derived from a mixture of Persian, Barbary, Arab, and native horses, from the first very closely interbred; and in every case departure from the pure Arab blood has been a failure. Rachel, the dam of Highflyer, was the daughter of Blank, and granddaughter of Regulus; yet both Blank and Regulus were sons of Godolphin. Fox was born under similar conditions of relationship. The dam of Goldfinder was the daughter of Blank and granddaughter of Regulus. The granddam of Buckhunter was a daughter of Bald Galloway, who was also the sire of Buckhunter. The great-granddam of Flying Childers, one of the most famous racehorses, was a daughter of Spanker, while his dam was also the dam of this last. The sire of the

[1] Blunt, *The Bedouin Tribes of the Euphrates*, ii. 250–276; Layard, *Nineveh and Babylon*, i. 327–331.

[2] N. H. Smith, *Observations on Breeding Race Horses for the Turf*, pp. 47–50, 56, 65, 8vo. London, 1825.



The dotted lines call attention to the individual horse in more than one place in the table.

Knight of St. George, a winner of the St. Leger, was also his grandsire and great-grandsire.[1] Nothing, however, but a careful examination of the accompanying genealogical table suffices to show how complicated and close is the relationship in the breeding of our best horses.[2] The breeder can have no hesitation, continues Mr. Walsh, in coming to the conclusion that in-and-in breeding carried out once or twice is not only not a bad practice, but is likely to be attended with good results. The evidence of repeated success in resorting to the practice of in-and-in breeding is too strong to be gainsaid.[3] 'For the racecourse,' says Dr. Elam, 'the pure south-eastern breed is adhered to; but different *stocks* of the same breed, and those brought up in different localities, are selected.'[4] However, by 'crosses,' breeders by no means understand the introduction of fresh blood. There are scarcely two thoroughbred horses in the stud-book, says Mr. Walsh, that cannot be traced back to the same stock in one or more lines. An absolute freedom from relationship is not to be found, or, if so, very rarely. Yet continued in-and-in breeding in the closest relationship he does not think advisable—it is apt to develop weak points in the constitution. 'The cautious breeder, therefore, will do well to avoid running this risk, and will strive to obtain what he wants without having recourse to the practice, though, at the same time, he will make up his mind that it is unwise to sacrifice a single point with this view.'[5] Mr. Darwin says that statistics show nearly one-third of our racehorses have proved barren, or have slipped their foals; a fact which he ascribes to their high nurture and close interbreeding.[6] The editor of the 'Field' gives the following statistics upon this point:—[7]

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[1] Sanson, *Comptes Rendus*, 1862, lv. 122, 123.

[2] Mr. Youatt, however, says that the most talented breeders have avoided in-and-in breeding during the present century, because they are convinced that it does harm (*The Horse*, p. 121). But Cecil, the editor of this edition, says in his own work (*The Stud-Farm*, etc. p. 79) that, though he thinks in-and-in breeding undesirable, yet he would allow it 'after three or four generations.'

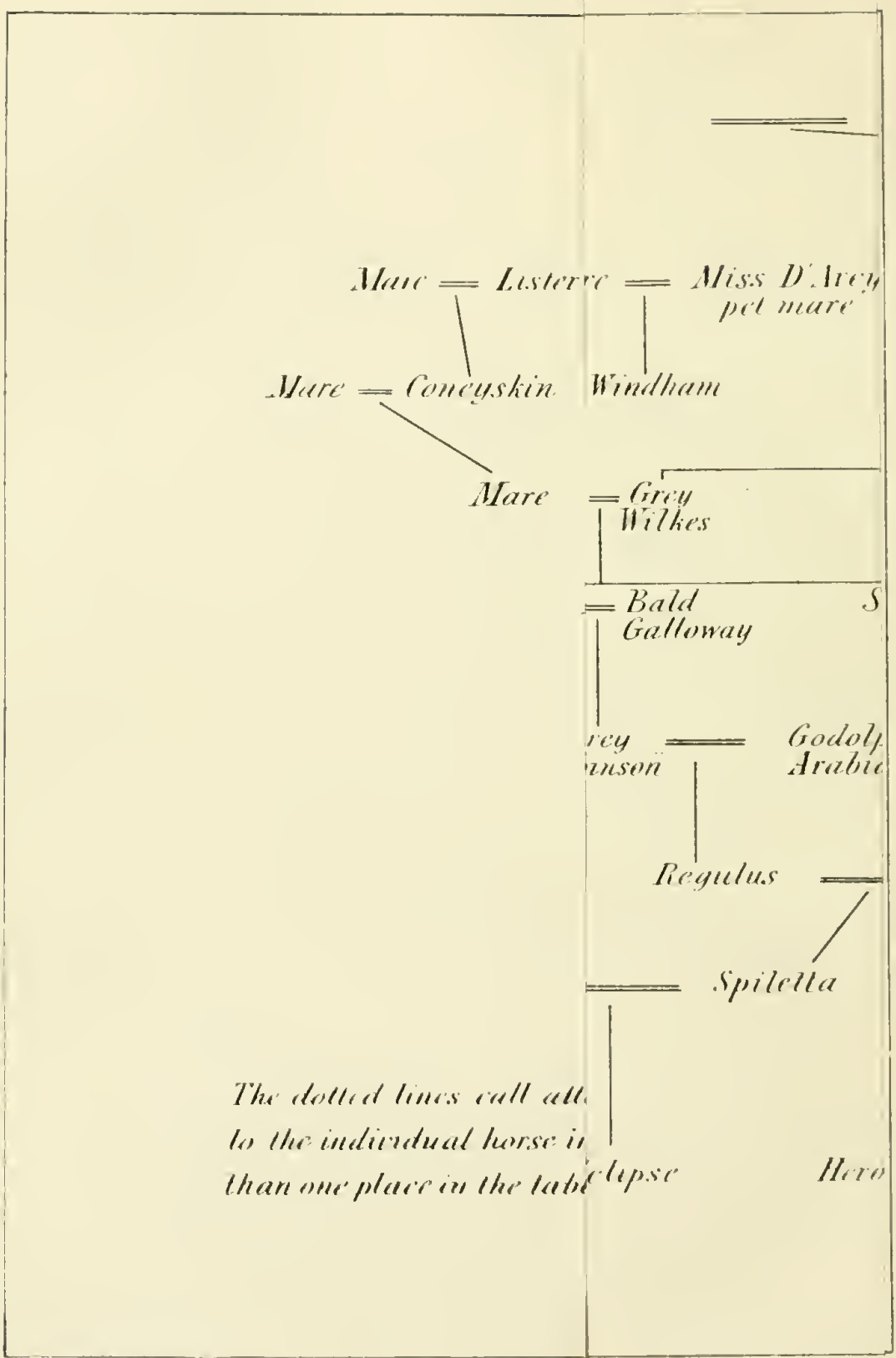
[3] Walsh, *The Horse*, etc. pp. 139–141.

[4] Elam, *A Physician's Problems*, p. 68.

[5] Walsh, *The Horse*, etc. pp. 141, 142.

[6] Darwin, *Descent of Man*, i. 303, note 40.

[7] The *Field*, July 24, 1875.


Mare
Lesterre
Miss D'Arcy
pet mare
Mare
Coneyskin
Windham
Mare
Grey
Wilkes
Bald
Galloway
Godolp
Arabic
Regulus
Spiletta
The dotted lines call att
to the individual horse i
than one place in the tabl
Eclipse
Hero

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Years	Colts	Fillies	Mares Barren	Slipped Foals	Per cent. Productive Mares	Per cent. Unproductive Mares
1846 to 1860.	605	600	388	56	74	26
1861 to 1874.	852	862	632	100	70	30

which shows an increased want of productiveness of 4 per cent. But I think that this may very possibly be caused by the growth of that most pernicious custom of running horses at two years old. In France, indeed, barely two foals are produced for every five mares sent to the Government stallions, which is 60 per cent. of barrenness; and yet these are not cases of in-and-in breeding, but mostly semi-crosses.[1]

In-and-in breeding in horses is carried on at any rate to a very great extent, and with decidedly beneficial effects on the race. Count Huniady, says M. Huzard, bred continually in-and-in; and he also gives other instances.[2] 'Nimrod' concludes a comparison between the thorough-bred and half-bred hunter in these words: 'As for his powers of endurance under equal sufferings, they doubtless would exceed those of the "cocktail," and being by his nature what is termed a better doer in the stable, he is sooner at his work again than the other. Indeed, there is scarcely a limit to the work of full-bred hunters of good form and constitution and temper.'[3] It is, in fact, the natural state of horses to breed in-and-in.

Donkeys, says M. Godron, are bred most carefully in the East, as carefully as the Arab horse, and their genealogy is as rigidly preserved to prevent any defilement of their blood. They are large, lively, rapid, and much esteemed.[4] In Egypt they fetch some thirty or forty pounds sterling

Some goats turned out on the island of Juan Fernandez in the year 1660 multiplied so prodigiously that it became necessary to turn out dogs to keep them down.[5] M. Aubé states that the Angora goats have occasionally to be crossed by a coarser sort in consequence of in-and-in breeding.[6]

[1] The *Field*. Letter from Aquarius, quoting from *La France Chevaline*.
[2] Huzard, in the *Ann. de l'Agriculture Française*, 5th series, ix. 504, 505.
[3] *Westminster Review*, July 1863, *cit.* p. 100.
[4] Godron, *De l'Espèce*, etc. i. 390, 391. [5] *Ibid.* pp. 407, 408.
[6] Aubé, in the *Bullet. de la Soc. Imp. Zool. d'Acclimatation*, iv. 515, 516.

Sir J. Sebright declares that by breeding between brother and sister he has seen strong spaniels dwindle into diminutive lap-dogs; and Mr. Darwin, in citing this, adds a case in which some bloodhounds on being bred in-and-in were afflicted with a bony enlargement of the tail; a malformation which was obliterated by a single cross; while Mr. Scrope attributes the rarity of Scotch deer-hounds to close inter-breeding, the few specimens yet existing being all related.[1] But why should they diminish for this reason when sheep, cattle, horses, and other domestic animals have been bred in-and-in for long periods without dying out? M. Aubé gives an instance of a farmer who received as a gift two magnificent dogs, brother and sister, and who wished much to breed from them. The offspring, however, proved very inferior; their bodies were smaller in proportion to those of their parents, with their heads and tails relatively large, and their backs weak and bowed. Though they retained the hunting instincts of their parents, they had none of their endurance, and the whole family died out at the third generation.[2] M. Boudin mentions a case where the offspring of a brother and sister were mute.[3] In these cases there was doubtless morbid inheritance, for Sir J. Sebright himself created many races of animals by in-and-in breeding, and was, as we shall see, a staunch advocate of the system. Dr. Child instances a case in which a dog was put to his daughter, and in succession to her puppies, and also to one of the puppies of the latter, yet the dogs were all good dogs.[4] Mr. Meynell's famous hounds were bred most closely in-and-in from sire and daughter, and dam and son, and sometimes brother and sister.[5] Turnspits and pugs were probably derived from 'sports,' and must necessarily have been much bred in-and-in.[6]

M. Bertrand, after forty years' experience in the breeding

[1] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. 100.

[2] Aubé, 'Note sur les Inconvénients,' etc. p. 517 of the *Bulletin Mens. de la Soc. Imp. Zoologique d'Acclimatation*, vol. iv. No. 11, for November 1857.

[3] Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 508, note 1.

[4] Child, *Essays on Physiological Subjects*, Note on Essay I. p. 54.

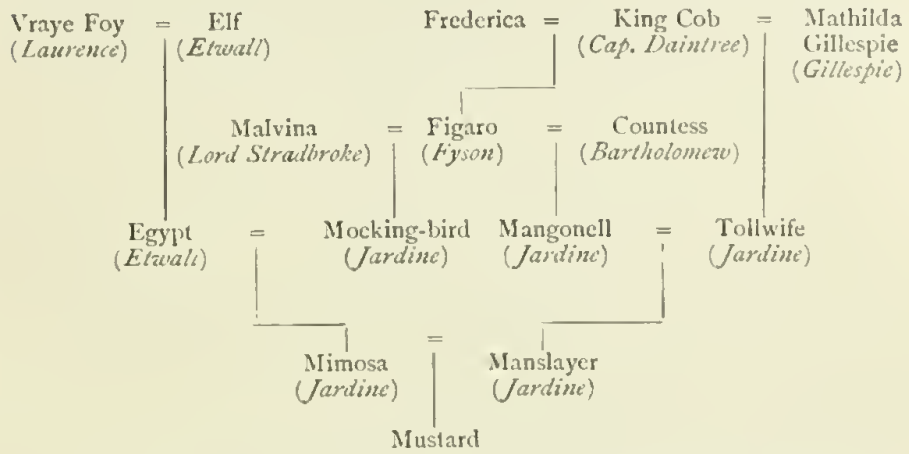
[5] Darwin, *The Variation*, etc. 1875, ii. 99; Walker, *On Intermarriage*, pp. 234, 235.

[6] Darwin, *ut sup.* p. 409.

of sporting and other kinds of dogs, considers in-and-in breeding to be injurious. He used never to cross his breed if he could possibly avoid it, and then noticed that after several generations they became more delicate, and, though better than their ancestors, less robust, and more subject to canine diseases, which were the more inveterate the longer the dog had been bred in-and-in. The males often became impotent, the females sometimes ceased to be fruitful at an early age, but every cross gave them back their vigour. M. Bertrand coupled two magnificent dogs, son and dam, with the result of four puppies, two of which died after sixty days, of paralysis.[1] But if M. Bertrand has been unsuccessful after forty years of experience, others have been successful. From an examination of their pedigrees, says Mr. Walsh, talking of greyhounds, 'it will be obvious that "Jason" and "Rosebud" were first-cousins, once removed as regards "Butterfly," and twice removed as regards "Majesty." Mr. Randall's celebrated bitch "Rival," as stout a greyhound as ever ran, was by a grandson of "King Cob," out of a daughter of that dog; and Mr. Sharpe's "Maid of Islay" * * * is another illustration of success attending this mode of breeding, she being by "Jason," a grandson of "Monarch," out of "Molly Malone," a granddaughter of the same dog, and she has also plenty of bone. Mr. Long's "Lizzie," again, may be quoted, being a large and bony bitch, yet out of an aunt by her nephew. "Motley" and his sisters, "Kitty Brown," "Miss Hannah," and "Money-taker," were also in-bred, and have been of great use at the stud, especially the two first named, to which we are indebted for "David" and his numerous winning progeny, and for "Chloe," the winner of the Waterloo Cup last year. All the litter were, however, small; but as "Tollwife," their dam, was a diminutive bitch, and had a strain of the Italian greyhound, no conclusion can be arrived at on that score. "Mustard," sire of "Monarch" and other good greyhounds, was three times in-bred to "King Cob," yet he possessed great size and enormous bone, and his son "Monarch" resembles him in both these

[1] Chipault, *Etudes sur les Mars. Cons.* etc. pp. 112, 113.

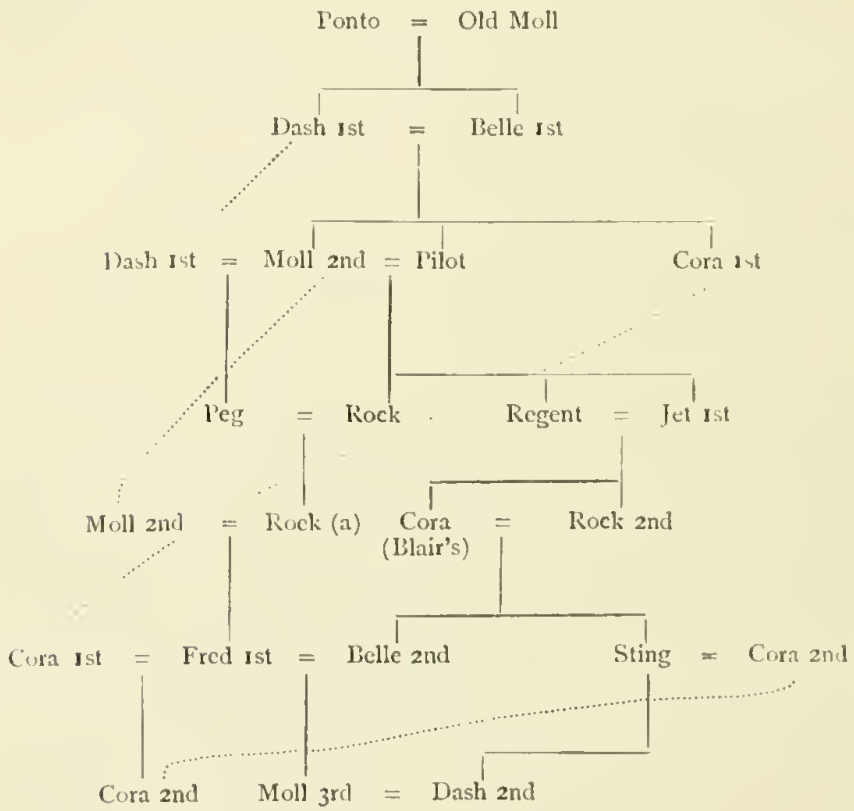
particulars. As one of the strongest modern instances of close in-breeding without loss of constitution, size, or bone, I append his pedigree, which is more remarkable from the fact that "Mathilda Gillespie" and "Vraye Foy" were also much in-bred.'



'The argument,' continues Mr. Walsh, 'that in-breeding, when not carried too far, is advantageous, is now so generally admitted, that it is a loss of time to support it by facts. Mr. A. Grayham's rule of "once in and twice out" is perhaps the most prudent course to pursue; but "twice in and once out" is, in my opinion, not carrying in-breeding too far when the out-crosses are decided.'[1] Mr. Laverack, a most successful breeder, and the creator of the 'Blue Belton' race of setters, is a most determined advocate of in-and-in breeding. His system is to select strong parents of the quality he wants. 'My dogs,' he says, 'are more *intercrossed* and *interbred* than directly bred in-and-in. There are several secrets connected with my system of intercrossing, that I do not think it advisable to give to the public at present. I can only say better constitutions, better feeders, and hardier animals than I have do not exist. It must not be supposed I am prejudiced and obstinate in my system of breeding. I have *tried* crossing, or letting my blood loose ten or a dozen times, but the result has always been unsatisfactory; therefore I stick to intercrossing with my own strain, as I have ever found it answer

[1] Stonehenge, *The Greyhound in* 1864, pp. 259, 260.

best.' He considers that the setter has generally degenerated in consequence of crosses, and because their blood has not been kept pure.[1] Whatever may be the difference between *intercrossing* and *in-and-in breeding*, it certainly appears from the subjoined genealogical table of the dog Dash, that Mr. Laverack in practice breeds habitually between brother and sister, and in the direct ascending and descending line :—[2]


Ponto = Old Moll
Dash 1st = Belle 1st
Dash 1st = Moll 2nd = Pilot
Cora 1st
Peg = Rock
Regent = Jet 1st
Moll 2nd = Rock (a)
Cora (Blair's) = Rock 2nd
Cora 1st = Fred 1st = Belle 2nd
Sting = Cora 2nd
Cora 2nd
Moll 3rd = Dash 2nd

He says himself, 'A dog named Trimmer (Blue Belton) was one of the best I ever possessed. * * * This extraordinary animal was bred between brother and sister.'[3] In America, says Mr. Burges, formerly at least, 'all in-bred animals were

[1] Laverack, *The Setter*, etc. pp. 2, 3, 29, 30.

[2] The dotted line calls attention to closer cases of interbreeding. This table is rearranged from that given by Mr. Laverack (*The Setter*, etc. p. 21). It may possibly be slightly inaccurate, but I do not think it is wrong in any important particular.

[3] *Ibid.* pp. 21 23.

looked upon with disfavour ; but of late years experience has modified these views, and our best horses, cattle, and dogs are at least interbred.' 'There is a great difference,' he adds, 'I own, between in-bred and interbred, but I am inclined to go further, and say that up to a certain point I do not think the stock is depreciated by in-breeding. * * * I have both owned and seen a number of dogs bred from brother and sister ; I never found but *one* which was not fully up to the standard of the parents.' Mr. Burges, too, like Mr. Laverack, gives pedigrees of dogs, which show that, whatever the theories of breeders may be, their practice, at least, is to breed in a manner that most people not breeders would call closely in-and-in.[1]

The dogs of Cairo form distinct tribes, each of which confines itself to its own division or quarter of the town. Should a dog of one tribe intrude upon the territory of another, whether urged by some tempting piece of carrion or by the mere spirit of adventure, he is immediately set upon by the others, and if caught severely punished. Should he be lucky enough to escape back to his own territory, he boldly faces his pursuers, and they in their turn fly.[2] In Constantinople the dogs have the same habit.[3] This natural segregation is also shown in the alco dog of Mexico, which, according to Mr. Darwin, dislikes pairing with other breeds.[4] The hairless dogs of Paraguay, too, mix less readily with European races than the latter do with each other.[5]

In many of the British deer-parks the deer have been allowed to breed uncrossed for long periods, without any degeneration showing itself, or loss of general health. The dark herds of deer in the Forest of Dean, in High Meadow Woods, and in the New Forest, supposed to have been brought by James I. from Norway, have never been known to mingle with the pale-coloured herds, although kept together with them.[6] Another instance of the rarity of crosses among

[1] Burges, *The American Kennel*, New York, 1876, 4to, pp. 55, 56.
[2] Lane, *Modern Egyptians*, i. 438.
[3] See the *Times* for Jan. 7, 1876, p. 7.
[4] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. 80.
[5] *Ibid.* [6] *Ibid.* p. 81

animals when left to themselves. Dr. Davy mentions the case of a pair of red deer, who about the year 1850 were taken from the herd and put into a paddock of twenty or thirty acres adjoining Stornoway Castle, Isle of Lewis ; these have multiplied yearly, and numbered, ten years after, twenty-three, not including several which were killed, all descendants of the original pair, and all very much improved in comparison with the deer of the forest.[1] Nevertheless it is the practice, says Mr. Darwin, to infuse new blood into the fallow deer of the British parks ; and this, he says, proves of the greatest benefit in removing the taint of *rickback*, and improving their size and appearance.[2] Rickbacked deer are too generally found in many parks, says Mr. Shirley, supposed to be due to weakness, brought on both by breeding in-and-in too much, and also by insufficient food.[3] In other words, we may say that the cause is unknown. The Scotch deer, however, breed naturally in-and-in, and the red deer generally breed between brother and sister for generation after generation,[4] and yet they are, as a rule, perfectly healthy. Mr. Darwin also justly points out that nearly all the finest stags are selected by Scottish sportsmen for shooting, which leaves only the worst specimens for breeding.[5] Viscount Powerscourt possesses a herd of Japanese deer (*Cervus sika*), derived from three hinds and a stag which were purchased of a London dealer in 1859. In 1879 they numbered about eighty, besides having supplied stock to five other deer-parks, and are described as very hardy.[6]

M. Aubé, by means of a most extraordinary series of arguments, attempts to substantiate an hypothesis that in-and-in breeding is a cause of albinoism. Besides a few experiments which he made on breeding rabbits in-and-in, of which we shall see more anon, he gravely states that he saw

[1] Child, *Essays on Phys. Subjects*, pp. 53, 54.
[2] Darwin, *ut sup.* p. 99; and Shirley, *Deer and Deer Parks*, pp. 241, 242.
[3] Shirley, *Deer and Deer Parks*, p. 243.
[4] See p. 9 of this work.
[5] Darwin, *Variation of Animals and Plants*, etc. 1875, ii. 192.
[6] In the *Proceedings of the Zoolog. Soc. of London*, 8vo, London, 1879, xlvii.

three partridges, two sparrows, and a whole single jackdaw perfectly white; and hence he argues they became albinos because, in all probability, their parents were related. Nor was this all; M. Aubé actually saw two albino deer from the park of Raincy, and in this case also had no doubt that they had become albinos through in-and-in breeding![1] But let us leave these childish arguments, gravely repeated by M. Devay,[2] and test his experiments. M. Aubé obtained guinea-fowl with an admixture of white plumage after the third generation of in-and-in breeding, and further asserts that if rabbits are bred in-and-in, the first generation will assume a grey colour spotted with white, or a pale russet colour; the next generation will be black, or black and white; the next a slate colour; and the sixth generation will be albinos.[3] No particulars are given as to the conditions of his experiment. I myself, however, have bred rabbits in-and-in in the closest possible way ever since the year 1875, and have found not the slightest indication of albinoism from this cause. I always bred from brother and sister *of the same litter*, generation after generation; and this undoubtedly is closer than breeding from parent and offspring, because the physical conditions of the two creatures paired have been the same continuously. This, as I shall show later on, is hardly a fair test, but at least, if it be an error, it is an error in favour of the Parasyngeniasts.

I chose the silver-grey or 'Riche' breed to begin with, and bought in the market two does and a buck, of whose pedigree I of course knew nothing. Now, M. Aubé says they first assume a grey colour spotted with white. I started with a grey colour. In the first generation (and therefore not in-bred generation) a white rabbit with black points (Himalayan breed) appeared. It was not an albino, and was undoubtedly an atavism or throw-back. Of course it was not bred from. In the first in-bred generation another of the same sort appeared, and was again not bred from. In the

[1] Aubé, Note sur les inconvénients qui peuvent résulter, etc. in the *Bulletin Mens. de la Soc. Impér. Zoologique*, No. 11, for November 1857, iv. 511, 513

[2] Devay, *Du Danger*, etc. pp. 54, 56. [3] Aubé, *ut sup.* p. 512

second, again one appeared, which died young. All of these were descended from the same original doe, which I shall call B. In the next generation appeared a russet or tawny rabbit, possibly due to a cross of the Belgian Hare breed in the ancestry of the other doe A ; or both the Himalayan and Belgian types may have been in the ancestry of the original buck C, for in this third in-bred generation one appeared also with a white toe, though it did not otherwise differ from the silver-grey type, derived from the doe A. While, therefore, in the first two in-bred generations two variations had appeared in family A, and variations had appeared in family B, in the third generation no variation appeared in family B, and two appeared in family A ; moreover, these two variations appeared in different sub-families, and there was no connection between them below the parent generation—that is, the two lines only met in the great-grandparents. The tawny rabbit was not bred from, the one with a white foot was, and produced in the next generation another individual with a white foot among a litter of four. In this fourth generation an individual with a white foot appeared in family B ; one of its grandparents' litter had been of the Himalayan type.

In the next generation the family A was crossed with a doe, purchased like the original ones, and which I shall call D ; and in the first litter of five, three were tawny and grey. Family B was not crossed, and in the fifth generation the doe with a white toe produced two young with white bodies and silver-grey points. These were not bred from, but a silver-grey pair of the same ancestry produced for the next generation one individual with a white toe. This sixth in-bred generation was then crossed with the doe D ; the buck was a silver-grey, and out of a litter of four, one was white with brown points, and another nearly an albino.

There were, therefore, no albinos, none of slate colour, none black or black and white (for the Himalayan type was always grey and white) ; there was no pure russet colour, no increase in variation with continued in-breeding, but just

the reverse. As may be seen in the table of averages, the percentage of variation steadily decreased till the sixth generation, when, owing to the accident of there being very few individuals, one variation brought the percentage up again to the level of the first parent generation which was not in-bred. Immediately, however, that a cross was introduced the percentage jumped up to 33·4, while the highest before in the in-bred generations had been 12·5 in one family and 6·2 in the other, if we neglect the sixth ; and if we do not, then 20·0 was the highest former percentage.

As regards other results from this experiment, I have said it was hardly a fair test, because in breeding generation after generation from brother and sister of the same litter, not only is the same blood secured, but also exactly the same physical conditions. With other animals that do not produce so many at a birth, breeding between brother and sister, while equally preventing a change of blood, would allow of change in physical conditions, of which here there was none. But in addition to this, when so hampered as to the choice of animals to breed from, any accident may easily extinguish a family, and unless a great number of families are kept this must occur. Now, my accommodation was only for about sixteen or eighteen individuals ; and since the young while growing have to be separated, the actual accommodation for breeding allowed for only three or four families on the average. In other respects the accommodation was exceedingly good. Each hutch had an open yard to it, some five feet square ; they were situated in the country, and, as a rule, they were tended by a gamekeeper.

The results I have tabulated in the following pages, first in a table of averages of vital statistics, and secondly in detailed results of breeding in each generation, so arranged that the reader may readily trace the parentage of any individual, with all particulars concerning it. Finally, I have given a comparative table of weights, so that any dwarfing or degeneration, if any, may be detected.

Table of Averages.

Generations :—	Parent	First	Second	Third	Fourth	Fifth	Sixth	Cross	First
Percentage of misses of fecundation—									
In Family A	0·0	20·0	28·0	0·0	54·6	—	—	0·0	—
In Family B	0·0	66·7	50·0	20·0	33·4	28·6	63·7	33·4	0·0
Average number per litter—									
In Family A	4·0	5·7	3·5	3·2	2·0	—	—	4·5	—
In Family B	5·0	5·2	4·0	3·2	4·0	3·7	1·2	3·0	4·0
Total percentage died young	46·7	20·4	39·4	31·0	50·0	38·9	60·0	6·7	87·5
For every doe, were born bucks . . .	2·28	0·84	0·67	0·54	1·17	0·5	—	0·75	—
Percentage not entirely silver-grey—									
In Family A	0·0	0·0	0·0	12·5	7·1	—	—	50·0	—
In Family B	20·0	4·7	6·2	0·0	6·2	2·3	20·0	33·4	—

Parent Generation.

Doe	Put to Buck	Date	Age in Days	Littered	Number of Young	Number Died	Sex of Survivors		Known as	Remarks
							B.	D.		
A	C	June 1, 1876	?	June 29, 1876	2	—	2	—	—	Not bred from.
,,	,,	Sept. 1, 1876	,,	Oct. 6, 1876	5	2	2	1	IAα	—
,,	,,	Mar 23, 1877	,,	Apr. 23, 1877	?	all	—	—	—	—
,,	,,	June 19, 1877	,,	July 19, 1877	5	1	2	2	IAβ	—
B	,,	June 2, 1876	,,	July 2, 1876	?	all	—	—	—	Killed by mother.
,,	,,	July 12, 1876	,,	Aug. 12, 1876	6	1	4	1	IBγ	One b. white body, not bred from.
,,	,,	Feb. 25, 1877	,,	Mar. 26, 1877	4	—	2	2	IBα	Do.
,,	,,	June 19, 1877	,,	July 19, 1877	5	—	4	1	IBβ	Do.

First In-bred Generation.

Doe	Put to Buck	Date	Age in Days	Littered	Number of Young	Number Died	Sex of Survivors		Known as	Remarks
							B.	D.		
$IA\alpha_1$	$IA\alpha_2$	May 1, 1877	207	June 2, 1877	9	1	6	2	$IIA\alpha$	—
,,	,,	Sept. 17, 1877	347	Oct. 19, 1877	7	all	—	—	—	Died in about 3 weeks.
,,	,,	Nov. 27, 1877	387	—	—	—	—	—	—	Bad time of year.
$IA\beta_2$	$IA\beta_1$	Apr. 24, 1878	279	May 27, 1878	2	—	1	1	$IIA\beta$	—
$IA\beta_3$	$IA\beta_4$	,,	279	May 22, 1878	5	—	3	2	$IIA\gamma$	—
$IB\alpha_2$	$IB\alpha_3$	June 19, 1877	84	—	—	—	—	—	—	Too young.
,,	,,	Aug. 12, 1877	138	—	—	—	—	—	—	Do.
,,	$IB\alpha_4$	Sept. 17, 1877	175	—	—	—	—	—	—	Bad time of year.
,,	$IB\alpha_3$	Oct. 31, 1877	219	—	—	—	—	—	—	Do.
,,	$IB\alpha_4$	Apr. 24, 1878	394	May 20, 1878	5	1	1	3	—	One doe white with black points. Not bred from.
$IB\alpha_1$	$IB\alpha_3$	June 19, 1877	84	—	—	—	—	—	—	Too young.
,,	,,	Aug. 12, 1877	138	—	—	—	—	—	—	Do.
,,	$IB\alpha_4$	Sept. 23, 1877	180	—	—	—	—	—	—	Bad time of year.
,,	$IB\alpha_3$	Nov. 9, 1877	227	—	—	—	—	—	—	Do.
,,	,,	Apr. 24, 1878	394	May 22, 1878	4	—	2	2	$IIB\alpha$	—
$IB\beta_1$	$IB\beta_2$	,,	278	May 26, 1878	8	—	3	5	$IIB\beta$	—
$IB\gamma_1$	$IB\gamma_2$	Mar. 7, 1877	207	Apr. 7, 1877	4	—	—	4	—	Not bred from.

Second In-bred Generation.

$IIA\alpha_2$	$IIA\alpha_1$	Apr. 24, 1878	326	May 25, 1878	4	3	—	1	—	Not bred from.
$IIA\alpha_3$	$IIA\alpha_4$	,,	,,	,,	5	1	2	2	$IIIA\alpha$	—
$IIA\beta_2$	$IIA\beta_1$	Oct. 13, 1878	140	—	—	—	—	—	—	Bad time of year.
,,	,,	Apr. 19, 1879	327	May 22, 1879	3	1	—	2	—	Not bred from.
,,	,,	Nov. 14, 1879	536	Dec. 12, 1879	2	—	1	1	$IIIA\beta$	Bad time of year.
$IIA\gamma_1$	$IIA\gamma_2$	Apr. 19, 1879	332	May 20, 1879	3	3	—	—	—	—
$IIA\gamma_3$	,,	Apr. 26, 1879	339	—	—	—	—	—	—	—
,,	,,	July 18, 1879	422	Aug. 18, 1879	4	1	—	3	—	Not bred from.
$IIB\alpha_1$	$IIB\alpha_3$	Apr. 19, 1879	332	—	—	—	—	—	—	—
,,	,,	July 18, 1879	422	?	—	—	—	—	—	There *may* have been a litter lost.
$IIB\alpha_3$	,,	Apr. 26, 1879	339	May 31, 1879	3	1	1	1	$IIIB\alpha$	—
$IIB\beta_1$	$IIB\beta_2$	,,	335	May 30, 1879	3	—	2	1	$IIIB\gamma$	—
$IIB\beta_3$	,,	Apr. 27, 1879	336	,,	6	3	2	1	$IIIB\beta$	One had a white body. The 3 young died in July and Aug.

THIRD IN-BRED GENERATION.

Doe	Put to Buck	Date	Age in Days	Littered	Number of Young	Number Died	Sex of Survivors		Known as	Remarks
							B.	D.		
IIIAα_1	IIIAα_2	Apr. 19, 1879	329	May 20, 1879	1	—	—	1	—	Not bred from.
IIIAα_3	,,	Apr. 26, 1879	336	May 28, 1879	5	5	—	—	—	—
,,	,,	July 18, 1879	420	Aug. 18, 1879	3	3	—	—	—	—
,,	,,	Nov. 14, 1879	539	Dec. 12, 1879	4	—	2	2	IVAα	One doe had a white toe.
IIIAβ_1	IIIAβ_2	Apr. 13, 1880	122	May 13, 1880	3	—	—	—	IVAβ	One tawny, and was not bred from.
IIIBα_1	IIIBα_2	Apr. 23, 1880	327	—	—	—	—	—	—	—
,,	,,	June 9, 1880	412	July 16, 1880	4	—	2	2	—	Not bred from.
IIIBβ_2	IIIBβ	?	385	Feb. 9, 1880	3	—	1	2	IVBβ	—
IIIBγ_1	IIIBγ_2	Apr. 19, 1880	324	May 25, 1880	1	1	—	—	—	—
,,	,,	June 9, 1880	375	July 13, 1880	5	—	1	4	—	Not bred from.

FOURTH IN-BRED GENERATION.

IVAα_2	IVAα_1	June 9, 1880	179	July 9, 1880	4	—	—	4	—	Not bred from. These were partly lop-eared, unlike the parent prick-ear. One had a white foot.
,,	,,	Nov. 2, 1880	318	—	—	—	—	—	—	—
,,	IVAα_3	Feb. 23, 1881	438	—	—	—	—	—	—	—
,,	IVAα_4	Apr. 16, 1881	490	—	—	—	—	—	—	—
,,	,,	June 20, 1881	555	July 23, 1881	1	1	—	—	—	—
IVAβ_1	IVAβ_2	Nov. 2, 1880	173	Dec. 2, 1880	3	3	—	—	—	Bad time of year.
,,	,,	Feb. 23, 1881	286	—	—	—	—	—	—	—
,,	,,	Apr. 16, 1881	338	May 22, 1881	1	1	—	—	—	Killed by the mother.
,,	,,	June 20, 1881	403	—	—	—	—	—	—	—
,,	,,	Aug. 31, 1881	475	—	—	—	—	—	—	—
,,	,,	May 11, 1882	728	June 12, 1882	1	1	—	—	—	—
IVBβ_1	IVBβ_2	Aug. 13, 1880	186	Sept. 13, 1880	5	—	4	1	VBα	—
,,	,,	Apr. 16, 1881	431	May 23, 1881	4	4	—	—	—	—
,,	,,	June 20, 1881	496	—	—	—	—	—	—	—
,,	,,	Aug. 31, 1881	568	Oct. 4, 1881	3	3	—	—	—	Killed by the mother.
,,	,,	Oct. 3, 1882	601	—	—	—	—	—	—	—
IVBβ_3	,,	Aug. 5, 1880	178	Sept. 6, 1880	4	—	3	1	VBβ	The young doe had a white toe.

Fifth In-bred Generation.

Doe	Put to Buck	Date	Age in Days	Littered	Number of Young	Number Died	Sex of Survivors		Known as	Remarks
							B.	D.		
VBα_2	VBα_1	Apr. 16, 1881	215	May 22, 1881	?	all	—	—	—	Killed by the mother.
,,	,,	June 20, 1881	280	—	—	—	—	—	—	—
,,	,,	Aug. 31, 1881	352	Oct. 4, 1881	2	2	—	—	—	Killed by the mother.
VBβ_2	VBβ	Jan. ? , 1881	143	Feb. 27, 1881	?	all	—	—	—	Left too long in same hutch as the bucks; the young were killed.
,,	VBβ_3	Apr. 16, 1881	222	May 20, 1881	4	1	1	2	VIBα	Both does have white bodies.
,,	,,	June 20, 1881	287	July 22, 1881	5	2	1	2	VIBβ	—
,,	VBβ_1	May 11, 1882	612	—	—	—	—	—	—	—

Sixth In-bred Generation.

VIBα_1	VIBα_2	May 11, 1882	356	—	—	—	—	—	—	—
,,	,,	Oct. 16, 1882	514	—	—	—	—	—	—	—
,,	,,	Apr. 1, 1883	681	—	—	—	—	—	—	—
VIBα_3	,,	May 18, 1882	363	—	—	—	—	—	—	—
,,	,,	Oct. 3, 1882	501	—	—	—	—	—	—	Killed by the buck.
VIBβ_1	VIBβ_2	Feb. 6, 1882	159	Mar. 7, 1882	1	1	—	—	—	Young one killed.
,,	,,	Aug. 12, 1882	386	—	—	—	—	—	—	—
,,	,,	Oct. 11, 1882	446	—	—	—	—	—	—	—
,,	,,	Apr. 1, 1883	618	May 5, 1883	1	—	1	—	VIIBβ	—
VIBβ_3	,,	Jan. 9, 1882	171	Feb. 9, 1882	2	2	—	—	—	Both killed.
,,	,,	May 11, 1882	293	June 9, 1882	1	—	1	—	—	With a white toe. Died Dec. 31, 1884.
,,	,,	Oct. 3, 1882	438	—	—	—	—	—	—	Killed by the buck.

First Cross.

D	IVAβ_1	Apr. 23, 1886	—	May 26, 1886	5	—	2	3	IDγ	2 does tawny and white, 1 buck.
,,	,,	Sept. 19, 1886	—	Oct. 22, 1886	4	1	1	2	IDδ	1 doe white with black points.
,,	VIIBβ	Mar. 26, 1885	—	Apr. 25, 1885	2	—	2	—	IDα	—
,,	,,	July 24, 1885	—	—	—	—	—	—	—	—
,,	,,	Sept. 5, 1885	—	Oct. 1, 1885	4	—	1	3	IDβ	1 d. and 1 b. tawny and white.

First In-bred Crossed Generation.

Doe	Put to Buck	Date	Age in Days	Littered	Number of Young	Number Died	Sex of Survivors B.	Sex of Survivors D.	Known as	Remarks
$ID\beta_1$	$ID\alpha_1$	Apr. 23, 1886	200	May 24, 1886	5	5	—	—	—	—
,,	$VIIB\beta$	July 12, 1886	280	—	—	—	—	—	—	—
$ID\beta_3$	,,	Apr. 23, 1886	200	—	—	—	—	—	—	—
$ID\beta_4$	$ID\beta_2$	Apr. 24, 1886	201	May 24, 1886	3	2	1	—	$IID\beta$	—

Average Table of Weights.

Generation	Under 100 Days			Under 200 Days			Under 250 Days			Under 300 Days			Under 350 Days			Under 400 Days			Under 500 Days			Under 600 Days			Under 700 Days			Over 700 Days		
	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.	Age in Days	Weight lbs.	Weight oz.
First .	86	3	1	139	4	0·7	213	4	10·1	279	4	6·9	347	4	14·7	394	5	4·8	413	5	1·3	565	4	15	699	5	5·3	—	—	—
Second .	—	—	—	139	4	10·5	209	3	12·3	—	—	—	339	5	2·3	—	—	—	460	5	0·9	539	5	6·3	696	6	3·4	—	—	—
Third .	—	—		154	4	6 1	239	5	5·8	287	5	15	330	4	12·8	385	5	7·5	435	5	4·1			—	694	5	4·5	802	5	1
Fourth .	—	—	—	142	4	6·2	228	5	7·8	279	5	14·1	332	5	12·8	379	6	11·7	448	6	2·9	561	6	4·3	627	6	3·1	860	6	7·7
Fifth .	—	—	—	150	4	5·5	219	5	14·9	283	5	5·2	—	—	—	336	5	15·7	—	—	—	—			612	6	2·9	881	6	4·8
Sixth .	—	—	—	103	3	15·7	—	—		293	4	14·9	—	—	—	369	5	12·3	—	—	—	527	6	7·4	655	6	7·4	866	6	10·5
Seventh .	63	4	6·5	150	4	11·0	—	—	—	288	5	13·5	329	5	9·5	—	—	—	473	5	6	513	6	7	657	5	15·5	768	5	15·7
First cross .	70	3	4·7	164	2	18·5	201	3	13·7	280	4	15·2	319	4	17·7	364	5	4	433	5	12·2	546	5	8·75	—	—	—	—		—
First crossed inbred .	—	—	—	—	—	—	202	4	5·5	—	—	—	315	3	14·75	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

Owing to the small number of families, as I have said, selection for any aim except colour was out of the question. In the first in-bred generation there were, in family A, 20 per cent. of misses of fecundation, or one out of five ; but if this one be omitted on account of the time of year, then there were none. In family B, eight out of twelve were missed ; but two, and probably four, ought to be omitted on the score of tender age ; and again two, and probably four, on account of the bad period of the year. The percentage should, therefore, be reduced from 66·7 to 33·4, and probably to nought. The average number per litter had increased one per cent. The percentage of early death decreased by half. But in these as in all future figures we must bear in mind the small number upon which the averages are founded, and the relatively large effect, therefore, of one accident or chance circumstance.

In the second in-bred generation two out of eight were misses in family A, or 28 per cent. One of these ought to be omitted on account of the bad period of the year, which reduces it to one in eight. In family B there were 40 per cent. of misses. The rabbits were then, and for some time after, under the management of an ignorant and careless labourer (I myself not residing in the neighbourhood), and in one of these I suspected there had been a litter. If there was, the misses would be reduced to one in five. The average number per litter decreased by over one. The percentage of early death increased, but it was not equal to the parent generation.

In the third in-bred generation there were no misses of fecundation in family A, although one was in November. In family B there was one in five, or 20 per cent. The average number per litter was reduced again by nearly one. The percentage of early death was reduced by 8 per cent.

In the fourth in-bred generation the misses were six out of eleven, or 54·6 per cent. Of these, three, and probably four, should be omitted on account of the time of year, which would make it 37·5, or 28·6 per cent.—that is, two out of seven. In family B there were two out of six, 33·4 per cent., but one was

certainly a bad period of the year. The average number per litter was further reduced in family A, but increased in family B. The percentage of early death was very greatly increased.

The fault of insufficient accommodation now showed itself. Owing to an exceptional number of early deaths in family A in the third generation in 1879, when under bad management, followed by a litter in the fourth generation of four does and no bucks, the continued breeding of family A as before was at an end. In family B, again, the only two surviving litters were four bucks and one doe, and three bucks and one doe. One of these had no surviving young, as nearly happened in the case of the doe IBa_1 in the first in-bred generation ; as happened with the does II Aγ_1, II Ba_1, III Aβ_1, IV Aβ_1. and might very easily have happened at any time. The other doe had two litters of four and five. In the fifth in-bred generation, therefore, there were two in seven misses of fecundation, or 28·6 per cent., the lowest as yet save one ; the average number per litter was 3·7 ; and the percentage of early death, if the two litters that died are taken at the average, was 38·9, or less than the parent, second, or fourth generations.

For the sixth generation there were left two divisions of family B, each consisting of a buck and two does. In one of these one doe proved barren, as in the second generation with doe II Ba_1. The other doe was worried to death by the buck. In the other family one doe, after having produced two litters, was likewise killed by the buck. In both these instances they were put together in October, an unfavourable period. The other doe only produced two litters of one each time.

Notwithstanding many adverse circumstances, and the insufficient number of families, the impression left upon my mind is that after the fourth generation there was a diminution of fecundity analogous to the disgust that the stomach would feel at the same diet long continued. At the same time I think that had the litters been separated early in life, and kept in different parts of the country, the fertility would have continued good. We must further bear in mind that

there was no selection for fertility, and that there is no evidence to show that sterility was not introduced accidentally, say by keeping the litter of III $B\beta_2$ in place of that of III $B\gamma_1$, for instance. Or, again, in the great preponderance of bucks in the fourth generation, which left only two does to breed from. But if there was any diminution in fecundity, there was no evil effect in any other way. The atavism to other types would have been entirely eliminated by the fifth generation if breeding from V $B\beta$ could have been avoided. Form and colour were perfect. There was no disease. An examination of the table of weights will show that the averages increased, and the seventh or any other generation was better than the first.

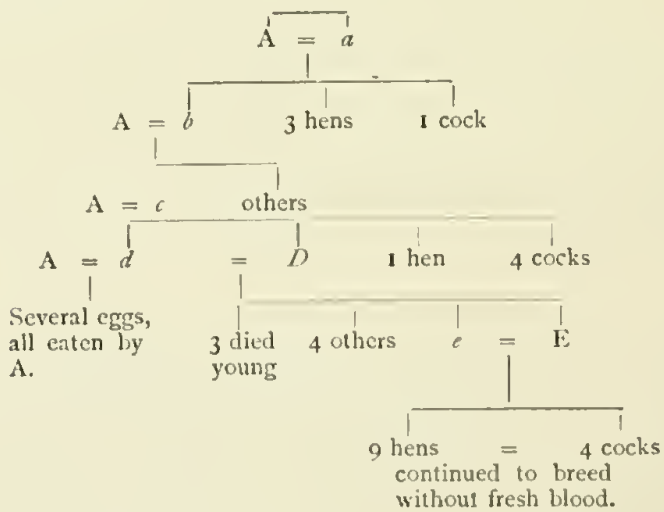
The introduction of new blood showed how careful breeders must be when they venture upon such a course. Out of fifteen young born, five were not silver-grey. In family A, which was continued with IV $A\beta_1$, the misses of fecundation were *nil*, the average per litter 4·5, the percentage of early death 11·2. In family B, continued with VII $B\beta$, the misses of fecundation were one in three; the average per litter, three; and the percentage died young, *nil*. Of the next in-bred generation it is too soon to speak.[1]

Sir J. Sebright asserts that his fowls got long in the legs, small in body, and bad breeders, from too close in-and-in breeding. Mr. Clark continued to breed in-and-in from his own kind of fighting cocks till they became under the weight required for the best prizes, and lost all their pluck. On one cross from Mr. Leighton's they again resumed their former courage and weight. This breeder found that breeding from father and daughter produced a greater loss of weight in the offspring than breeding from mother and son.

[1] In the *Bullet. de l'Acad. Royal de Méd. de Belgique*, 1866, ix. 287–295, 305–307, M. Legrain gives an account of a series of experiments in the breeding of rabbits in-and-in, which he pretended to have conducted. In consequence of the doubts of various members a commission was appointed to inquire into them, with the result, as reported by Dr. Crocq (*ibid.* 3rd series, i. 26–49, 388, 534), that these experiments would have taken about seventeen years, and hence M. Legrain must have begun them while a boy at school, and ten years before the paper by M. Aubé (read before the *Soc. d'Acclimatation*, Feb. 6, 1857), which they were designed to test, was published. In consequence, the Academy, without allowing M. Legrain to be examined in his defence, voted that his memoir should be held as non-existent.

Mr. Eyton, of that ilk, says his Dorkings became smaller and less prolific if not occasionally crossed. Mr. Hewitt says the same of Malays, as to size at least. But fanciers with large stocks can breed from their own stock without this danger, because they keep various families separate for crossing purposes. Mr. Ballance, who breeds in this way, says that breeding in-and-in does not necessarily cause deterioration, 'but all depends upon how this is managed.' 'My plan has been to keep five or six distinct runs, * * * and select the best birds from each run for crossing. I thus secure sufficient crossing to prevent deterioration.'[1] Jumper and frizzled fowls were in all probability derived from monstrosities of their kind,[2] and must, therefore, have been much in-and-in bred. M. La Perre de Roo bred Cochin China fowls for four generations, always pairing brothers and sisters, without any degeneracy or failure in fertility. He then tried black Japan Bantams in the same way for seven generations, with results as before; moreover, he tried in the sixth generation pairing father and daughter, with equally good results. Another experiment, carried on in the same way, gave the same result.[3]

M. La Perre also bred pheasants, with the result depicted in this table:—



[1] Darwin, *The Variation*, etc. 1875, ii. 104, 105.
[2] *Ibid.* ii. 409.
[3] La Perre de Roo, *La Consanguinité*, pp. 80 85.

That is, in the first generation he paired brother and sister, and obtained four hens and one cock. He then paired one of the hens with her father, and again paired the father with the issue of that union, and from nine eggs were hatched two hens and five cocks. One of these young hens was paired with her father, who was also her grandfather and great-grandfather ; a union which produced several eggs, but they were always eaten by the old cock. He was therefore taken away, and a brother of the hen substituted ; twelve eggs were laid, and nine birds were hatched, of which three died young. Two selected from the survivors were then paired, but owing to a change of *locale*, and the new aviary being too small, also to M. La Perre's avocations, there was no result. But in the following year fifteen eggs were laid, of which thirteen were hatched, and the young enjoyed the best health. After this M. La Perre allowed them to breed among themselves without selection, and no degeneracy has resulted.[1]

Mr. Darwin crossed some half-bred Penguin and Labrador ducks with Penguin, and afterwards bred them in-and-in 'and they were extremely fertile.'[2] Mr. Hewitt had a brood of wild ducks, which were carefully kept uncrossed, but nevertheless, in the course of two or three generations they grew larger and more like the tame duck ; he therefore never kept them for more than six generations without crossing them again with the wild duck.[3] The hook-billed duck must have been bred in-and-in for some time, since it was no doubt derived from a 'sport.'[4] M. La Perre says that he knew of some ducks at Ruysselede which had bred among themselves for twenty years without change of blood.[5]

'There are a great many sorts of fancy pigeons,' says Sir J. Sebright, 'and each variety has some particular property which constitutes its supposed value, and which amateurs increase as much as possible, both by breeding in-and-in, and by selection, until the particular property is made to predominate in such a degree, in some of the most refined sorts,

[1] La Perre, *La Consanguinité*, pp. 104-106.
[2] Darwin, *The Variation*, etc. i. 294, note. 1875. [3] *Ibid.* p. 293.
[4] *Ibid.* ii. 409. [5] La Perre, *ut sup.* p. 110.

that they cannot exist without the greatest care, and are incapable of rearing their young without the assistance of other pigeons kept for that purpose.'[1] He continued closely interbreeding some owl pigeons, till they arrived at such a degree of sterility that he nearly lost the breed. Mr Brent crossed a trumpeter pigeon with a common pigeon, and afterwards bred him with his female descendants to the fourth generation, but failed to get a fifth. All fanciers cross their breeds, says Mr. Darwin, but he admits that their excessive delicacy cannot be accounted for by the amount of in-and-in breeding which does take place. He himself paired a brother and sister of a hybrid breed, and found them perfectly fertile.[2] M. La Perre bred in-and-in with fantail pigeons with perfect success. He paired a female with her son, her grandson, and great-grandson, and there was neither sterility nor degeneracy. Some Bald-heads were bred for twelve years without the introduction of fresh blood: he carefully eliminated every bird that was not perfect of its sort, bred always from brother and sister of the same generation, and after eight generations, so far from being degenerate, they were a great improvement upon the original pair. With Blue Dragons his experience was identical, and they, like the others, were bred from brother and sister for eight generations. Some other pigeons were bred by M. La Perre in the same way for seven or eight years; he then sent a pair to a friend, who continued to breed them in the same way for three years. A pair of these latter were sent to Doomkerke, where they still continued to propagate themselves in an aviary, and without the smallest evil result; but here, perhaps, the change of locality may have acted beneficially upon them. In 1877 M. La Perre received a pair of carrier pigeons, brother and sister, from a London dealer. The first year they brought up three couples of young of which one couple was presented to a friend, another couple lent to a gentleman, who bred several healthy young from them, while the female, still in M. La Perre's hands, was accidentally killed. The borrowed pigeons were returned in 1879

[1] Walker, *On Intermarriage*, p. 227.
[2] Darwin, *The Variation*, etc. 1875. i. 201, 202, note 19; ii. 106.

together with a daughter, who was paired with her father, with apparently the best results. Other instances are given by M. La Perre of in-and-in breeding of carrier pigeons for four or six generations, and all without any evil result whatever.[1]

M. La Perre bought a pair of canaries, brother and sister, and the produce of a brother and sister, from a breeder at Brussels. These he bred in-and-in, always from brother and sister, for eight generations while in his own possession, irrespective of the breeder's practice from whom he had bought the original birds, and who also bred without consideration of consanguinity. The breed was put an end to by the Prussian invasion, like so many of his other experiments, but no degeneration or want of fertility of any kind was observable.[2]

In all the experiments practised by this gentleman there was not the slightest evidence confirming M. Aubé's assertions as to albinoism. In no case did any of the birds, fowls, guinea-fowl, ducks, peacocks, pheasants, pigeons, or canaries produce an albino.

The habit of insects as regards breeding in-and-in have been little studied. A good many breed parthenogenetically for many generations, such as the *Phylloxera*, which has been known to produce itself for sixteen generations in this way while in captivity, without any sign of degeneration.[3] Others, again, are known always to reproduce themselves without a male. But, as a rule, they do cross to a very great extent; for even those which live in communities, such as hive bees, termites, and ants, do cross in the process of dispersal.

The significance of the variety in the means of reproduction among the lower forms of organisms, animal and vegetable, will be discussed in the eighth chapter. But it is evident from the facts narrated in this chapter that if consanguineous marriage is injurious otherwise than through inheritance, this cannot in any way affect mankind; for wherever any experiment has shown that after continuous in-and-in breeding barrenness is caused, this in-and-in breed-

[1] La Perre de Roo, *La Consanguinité*, pp. 85-94.
[2] *Ibid.* pp. 98-102, where the details are given.
[3] M. P. Boiteau, in the *Comptes Rendus de l'Acad. des Sciences de Paris* for January 25, 1886.

ing has always been so very close that it could not possibly have been done in experiments on man. On the other hand, many other experiments, or rather instances, have been detailed, in which, though there has been close in-and-in breeding, rather beneficial than injurious results have been obtained.

That such breeding will produce disease or malformation in any other way than through ordinary inheritance I fail to find any reliable evidence whatever; but undoubtedly there is the disadvantage inherent in every form of restriction, that if a breeder be restricted to certain animals, the accident of an undue number of one sex being born will force him either to let his breed die out, or to have recourse to other animals, and so introduce new blood whether he wishes it or not. It further appears that in many cases, very long and very close interbreeding, in animals which naturally would move freely from place to place, cannot be carried on without some degree of sterility appearing, if all the animals are kept continuously in the same place and under the same conditions; and that this is due to want of change or a sort of fatigue of sameness, which may, so far as our evidence goes, be remedied without the introduction of fresh blood, merely by keeping the individuals in different localities under slightly differing conditions. On the other hand, to improve by crosses is almost impossible, since many improvements have been obtained from the in-and-in breeding of monstrosities or sports which could not have been perpetuated by crossing while crosses tend to produce mediocrity, or even reversion to a primitive and unimproved type, and therefore to degeneration. At the same time the evidence is abundantly sufficient to show the great value of crosses when judiciously carried out in removing an inherited disease, and, as Mr. Darwin shows, in the increase of size it often gives to the offspring; but the fact still remains that consanguinity, so far as our evidence has gone, cannot be said to originate malformations, disease, or sterility.

CHAPTER VII

ON THE ALLEGED BENEFITS OF CHANGE OF BLOOD IN MANKIND.

IN the last chapter I attempted to show that when in-and-in breeding proves injurious to the offspring, and this evil is removed by a cross, it does not prove the in-and-in breeding is itself injurious, but only shows that carelessness may make it so ; and however doubtful the above evidence may leave us, whether in-and-in breeding generally leads to good or to bad results, there can be no rational doubt, after studying the effects of crosses, that in-and-in breeding cannot create disease, but at most is able to intensify an hereditary taint. For if in-and-in breeding is in itself bad, then crosses must be beneficial. If crosses act by virtue of being a cross and not by virtue of removing an hereditary taint, then the greater the difference between the two animals crossed, the more beneficial will that act be.[1] But it is an undoubted fact that the wider the difference the less good is the result as a rule. Hence crosses do not and cannot act in man at all, or in any other animal that has not been so closely bred in-and-in in the same locality, that a slight change becomes beneficial, by any inherent virtue beyond this slight change. If they stopped here, crosses would in some cases, no doubt, be beneficial, for, besides giving this slight change, they frequently increase the size of the progeny beyond that of either parent.

[1] It has been urged against this argument that because a slight change may be beneficial, it does not follow that a great change must be. If a small amount of salt is good for the constitution, a great amount may be bad. But human beings all belong to the same genus, and we cannot imagine them to, and in fact they do not, refuse to interbreed ; though in some cases there is a difficulty. The argument remains, if change is good *per se*, the more the better—or, only a little change is good.

But the cost is an ill-balanced growth, reversion to unimproved forms, and the loss, in proportion to the difference between the parents, of generative power in the offspring. Experience has taught breeders to dread the introduction of fresh blood, sometimes forced upon them by the accidents described in the last chapter; and if this is so with animals, whose pedigrees are known and recorded, how much more dangerous is it in mankind, where a man knows, as a rule, nothing whatever of the pathological history of the family he marries into, even in the usual case of a marriage with one of his own country! while in the case of a union between two persons of different races, such as a white with a Hindoo or negro, he has to fear an ill-balanced temperament, a weedy body, and more or less sterility, in addition to reversion to a savage type worse than that of the lowest of the two parents.

There have lately appeared several articles in various periodicals on the moral state of the *Eurasians*, as they are called, or half-breeds between British, Portuguese, Dutch, or French Europeans, and Hindoos. 'The dangerous character of this element in the society of our Eastern Empire,' says the 'Times,'[1] 'has long been recognized. The Eurasians, with a few remarkable exceptions, have shown all the vices of both the parent races, and hardly a sign of the virtues of either Europe or Asia. Truth, honour, and honesty have been almost as rare among the men as chastity among the women. The sincerity and endurance of the Anglo-Saxon, the gravity, dignity, and temperance of the Hindoo, are lost in the Eurasian character.' 'The lower classes of half-castes in India,' says the 'Pall Mall Gazette,' 'lead the life of pariah dogs, skulking on the outskirts between the native and the European communities, and branded as noxious animals by both. In a higher class the lads pick up a living as menial servants, or on the river or wharfs, but constantly lose their places from drunkenness, and are reduced to starvation and the gaol.'[2] The life of the women is even more degraded, according to the Archdeacon of Calcutta.[3] Sir Bartle Frere also regarded

[1] The *Times*, September 3, 1874.
[2] *Pall Mall Gazette*, September 1, 1874. [3] *Ibid.*

them as an inferior race to that of the Hindoo parent, except perhaps, in feature ;[1] and even their apologists cannot put them on a level with either of the parent races, and only succeed in showing that many of them are capable of cultivation. Of the Dutch-Singhalese half-castes, M. Périer says that though some of the women are delicately pretty, the men are so slight and so badly made, that they are at once distinguishable from the parent races. They are lazy, effeminate, without a virtue, but with all the vices of both parents.[2] 'Undoubtedly,' says Mr. Sendall, late Director of Public Instruction at Ceylon, 'there are characteristic failings and vices incident to a mixed pedigree, interesting to the scientific observer, and requiring due recognition on the part of administrators and statesmen. * * * If not destined for high achievements, they are still capable of attaining a fair average level of moral and intellectual development.'[3] And Sir Alexander Arbuthnot says of them that 'there is nothing in the Eurasian nature which precludes the expectation that, in their case, education will develop many of the qualities which people in India are accustomed to regard as belonging exclusively to the ruling race.'[4] Mr. Digby, a staunch apologist, says of the Eurasians of Ceylon that they are very superior to those of the continent, and show no marked inferiority to the dominant race, 'save in certain qualities—such, for instance, as perseverance and persistence ;' while he admits that the Portuguese half-castes were worse than either race.[5] De Warren says they are well gifted, but he adds that they inherit more often the vices of both parents than the virtues of either ;[6] and Görtz says that 'these half-breeds are nearly all of relaxed temperament, and their mental power is poor.'[7] But whatever may be the cause of their moral degradation, it is certain that they are neither fertile among themselves, nor are unions of the two parent

[1] Tilt, *Health in India*, p. 109.
[2] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 295.
[3] Letter to the *Times*, September 9, 1874.
[4] *Macmillan's Magazine*, October 1874, p. 558.
[5] Digby, 'The Eurasians of Ceylon,' in the *Calcutta Review*, 1876, lxiii. 174, 183.
[6] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 293.
[7] Waitz, *Anthropologie*, i. 201.

races fruitful. It is the exception when a Hindoo female has children by a European husband ;[1] and the half-castes themselves rarely rear their children.[2]

The Topas, a set of half-castes of Pondicherry, between Hindoo women and French or Portuguese men, are, according to an anonymous author, debased, ignorant, superstitious, lazy, and debauched. Négrin confirms this ; and Dr. Collas asserts that they are far more subject to phthisis than either parent.[3] According to the *Revue Coloniale*, says M. Broca, the Topas of Pondicherry show a mortality even greater than that of Europeans, though these are considerably shorter-lived in India than in Europe.[4]

The Dutch-Malay half-breeds of Java, who go by the name of Lipplapens, are stupid and nerveless, says Görtz. M. Boudin says they can be employed in nothing by the Dutch on account of their stupidity. As to their fertility, Dr. Yvan says of them that they may produce among themselves up to the third generation without any necessity of crossing with one of the parent races, but they then produce only daughters, who are generally sterile.[5] The Portuguese-Malays, according to Dr. Yvan, are also indolent, small, meagre, degraded, without any of the energy of their savage parent, or anything in common with their conquering fathers.[6] It appears that the Portuguese can bear the climate far better than the Dutch ; for the latter are generally sterile even among themselves at Batavia, according to Steen Bille, who says that their children are weak and poorly, and frequently sterile in the second generation, while the Portuguese are everywhere fertile ; moreover Dr. Yvan believes that in other Dutch colonies the half-breeds are continuously fertile. It is suggested, therefore, by M. Broca that the sterility of the Lipplapens may be due to the effect of the climate. Yet he himself considers this to be but a partial cause, and attributes their sterility to the fact that they are

[1] I give this on the authority of several gentlemen who are well acquainted with India. [2] The *Pall Mall Gazette*, September 1, 1874.

[3] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 294, 296.

[4] Broca, *Hybridity*, etc. Blake's Trans. p. 39.

[5] Waitz, *Anthropologie*, i. 201, 207 ; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 304 ; Broca, *Hybridity*, etc. Blake's Trans. pp. 39-41.

[6] Périer, *ut sup.* pp. 300, 301.

proportionally numerous to the parent races, since the Dutch are numerous compared with the natives, and hence a large colony of Lipplapens is produced, who marry among themselves instead of with one of the parent races.[1] The Spanish-Malay half-breeds, says Souven, have the usual qualities of Creoles—bravery and indolence. On Mindanao, where the half-breeds are in the majority, they are very proud of their Spanish blood, and speak Castilian with greater purity than it is spoken in many parts of Spain.[2] In Amboyna the mixed breeds between Portuguese and natives are far darker than are even the natives.[3] Of the half-breeds between the Japanese and Ainos, the Rev. Mr. Batchelor, who has lived for years among the latter, says they show a diminished fertility: 'The second generation is almost barren; and such children as are born, whether it be from two half-breed parents or from one half-breed parent and a member of either pure race, are generally weakly. In the third or fourth generation the family dies out.'[4]

Everywhere in the South Seas crosses have debased the native races, fully as much perhaps from their fellowship with the scum of Europe as from the hybridity. The fact remains, however, that as soon as the Ladrone Isles fell under the yoke of foreigners, death, pestilence, and depopulation began. At present these unfortunate islands are inhabited by a mixed race of Spaniards, Tagals, Caroliners, Polynesians, and Chinese—a good-natured and soft-hearted race, but exceedingly ugly, indolent, and listless; while the original pure race was handsome, well formed, and stronger than most Europeans.[5] Neither do the unions of Europeans and Polynesians seem to be particularly fertile. Jacquinot saw only two half-breed Anglo-Tahitians, a perfect welding of both races. Alfonsi saw not even one half-breed at Tahiti, during a residence of eighteen months on the island, and this notwithstanding that there was a French garrison of about 400 men stationed there,

[1] Waitz, *Anthropologie*, i. 207; Broca, *Hybridity*, Blake's Trans. pp. 40–43; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1870, iii. 230.
[2] Périer, *ut sup.* 1865, ii. 303.
[3] Waitz and Gerland, *Anthropologie*, v. part i. 107.
[4] See a letter by F. V. Dickens in *Nature*, xxxv. 534.
[5] Waitz, *Anthropologie*, v. part ii. 47, 161, 162.

besides about 200 other Europeans and Anglo-Americans. During a residence of four years on Nukuhiva the same gentleman saw only one half-breed, while there were 100 French soldiers in the place. In the years 1862–63 there were twenty-six marriages between Frenchmen and native women on Tahiti and Morea, which produced 'at least double the number of children,' or about two per marriage. Davis, however, states that Europeans and Sandwich Islanders are very fertile together, and that it often happens that a woman who is barren with her native husband becomes a fertile wife to a European! On the island of Owahu, to which all his personal observations relate, he says the European-native half-breeds form a large class, and are very handsome, but nearly barren among themselves.[1] In New Caledonia, De Rochas saw but two half-breeds. In Fiji these mixed marriages seem proportionally far more fertile. In 1851, Binner found on Ovalau a good school with about eighty half-caste children; and after he had been on the island some time he got double the number to attend. There is a story, too, of an Irish convict who escaped from New South Wales to Mbau or Rewa, where he became the father of about fifty children. Du Bouzet talks, too, of the numerous progeny of a few English and American sailors at Levuka; but Pritchard says that when these half-breeds marry among themselves, they are far more sterile than when they intermarry with one of the parent races.[2] Staff-Surgeon A. B. Messer, of H.M.S. 'Pearl,' says there were 120 adult men, 200 women, and 250 children of the American or European half-caste race on the islands, who live like the natives and are looked up to by them, but are despised by the whites.[3] The half-castes in Fiji did not impress Cooper in their favour. They increase rapidly in numbers, but 'their intellect is of low order, and their morals lax.'[4]

Cruise, after a long residence in New Zealand, says he saw but two European-Maori half-breeds, and thinks that

[1] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 307; 1870, iii. 234, 235, 238.

[2] *Ibid.* 1870, iii. 237, 238. *Pall Mall Gazette*, December 21, 1875.

[4] Cooper, *Coral Lands*, i. 243; ii. 99. London, 1880; C. F. Gordon Cumming, *At Home in Fiji*, ii. 154.

they must practise abortion, which is very probable, since M. Périer says that there are now 500 there. According to Polack these half-breeds are a fine, healthy, and strong race. Miss Gordon Cumming found them, contrary to her experience in other places, superior to the natives; but Savage says they are not either mentally or bodily superior to either parent.[1] Gliddon says that before the extermination of the Tasmanians only two European-Tasmanian half-breeds were known to have been born. Quoy and Gaimard saw only one; Jacquinot saw none; Jeffreys, indeed, saw one half-breed, a girl, who, he says, had a very agreeable figure; and asserts that the half-breed infants were burnt by the Tasmanians, and their mothers maltreated—which would certainly account for the dearth of them among the natives, but not for their absence when born under the protection of resident Europeans.[2]

In Australia, as in Tasmania, the absence of half-breeds is so remarkable that Waitz is driven to account for it by an accusation of infanticide. They are born, according to Macgillivray, but do not seem to live—at least not at Port Essington. In New South Wales every half-breed *boy* is said to be killed.[3] But, at all events, the chief Bongarri kept his son alive, a half-breed, the offspring of the chief's wife and a convict.[4] Mrs. Praed, quite incidentally, mentions that the blacks had arranged to kill an infant Chinese-Australian girl, and that half-castes were frequently killed.[5] Cunningham and Lesson speak only of one, and that is the same one, the son of Bongarri's wife. Mone says that in 1842 only three half-breeds were known in all Australia. Indeed, the very word *cross-breed* was used in Australia in a totally different signification from what it is elsewhere.[6] Though there are, and still more frequently were, unions of a semi-permanent character between whites and natives, all accounts

[1] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1870, iii. 236, 243; Waitz, *Anthropologie*, i. 201; and C. F. Gordon Cumming, *At Home in Fiji*, ii. 154.
[2] Périer, *ut sup.* pp. 241–243; Broca, *Hybridity*, etc. Blake's Trans. p. 47.
[3] Waitz and Gerland, *Anthropologie*, i. 203; vi. 779.
[4] Broca, *ut sup.* p. 52.
[5] Praed, *Australian Life*, p. 62. London, 1885.
[6] Broca, *Hybridity*, etc. pp. 47–48; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, iii. 1870, 238, 239.

agree that they are not fertile ; and still more, that if not designedly killed, the hardships of savage life generally kill the offspring. But when half-breeds are spared, says Jung, they are generally females.[1] 'Onkaparinga,' however, seems to consider the half-breeds too numerous—probably the result of a more settled life of the aborigines, and repeats of them the stock phrase which we meet everywhere, that they 'have the worst vices of both races, without the virtues of either.[2]

The Portuguese-Chinese half-breeds at Macao are given up to Asiatic vice, says Castano. The men are robust and big, with regular features and animated eyes. The women are yellow-skinned, with the nose flat, the mouth enormous, and a massive frame.[3]

The half-breeds between the Dutch and the Hottentots are distinguished, says Moodie, for uniting in their persons the vices of both people. They are superior to the Hottentots in understanding, and perhaps under other circumstances many of them would also be superior to the Dutch. As it is, however, they are a drunken and depraved lot, unwilling to work or lead a regular life. They consider themselves to be superior to the Hottentots with whom they live, and hate the white population, from whose society they are altogether shut out. Le Vaillant, Lichtenstein, and Barrow agree that the Hottentot women are more fertile with whites than with their own race, which is accounted for by the superior comforts of the companion of the white man as compared with the miserable state formerly of the natives under the whites ; and also to the custom among the natives of not weaning their children for two or three years.[4] In the year 1801 a horde of these half-breeds, or Bastaards, as they were called, established themselves near the Orange or Gariep River, together with a lot of Bosjesmen, Namaquas, Kaffirs, and

[1] K. E. Jung, 'Ueber die Familienverhältnisse der Austral-Neger in *Die Natur*, pp. 89, 90, for February 12, 1877. See also E. J. Eyre, *Central Australia*, London, 1845, ii. 324 ; and G. Taplin, *The Narringui*, Adelaide, 1874, p. 11.

[2] See the *Field*, July 24, 1875.

[3] Périer, *ut sup.* ii. 1865, 301, 302.

[4] Périer, *ut sup.* p. 321 ; Barrow, *Travels into the Interior of Southern Africa*, i. 97 ; Buckle, *Miscellaneous and Posthumous Papers*, ii. 63, Art. No. 155.

pure Hottentots, under the leadership of a chief named Kok. In the same year a missionary began to organise them into a settled community in the village of Klaarwater. In 1805, when visited by Lichtenstein, there were about thirty families, one-half of which belonged to the Bastaard race ; the rest were Namaquas, or Hottentots, and the village began to grow apace by the arrival of refugees, by intermarriages with Bosjesmen, and with Koranas of the neighbourhood. The missionaries seemingly had not much influence over the colony, for the people practised polygamy, they lived by pillage and hunting, smeared their bodies with paint, covered their hair with grease, and were ignorant and uncivilised generally. About the year 1810, however, the missionaries made another earnest endeavour to civilise them ; they tried to make them take to agriculture, changed their old name of Bastaards to that of Griquas, an old Hottentot name, while Klaarwater was renamed Griqua-town. Griqua-town was now joined by a large body of Koranas, of which there were 1,341 in the year 1813, on a total population of 2,607, or more than half were Koranas. In the year 1814, owing to an attempt of the Governor of Cape Town to make them join the local army, Griqua-town was nearly revolutionised ; a part of its people went off to the mountains of the neighbourhood, turned robbers, and, under the name of Bergmaars, pillaged the country round about. Joined with bands of Koranas, they robbed and murdered the Bechuanas and Bosjesmen, carried off their women and children, and thus further mixed their race. At last, in 1825, the Bergmaars were persuaded to return to Griqua-town and live peacefully ; but in the meanwhile those who remained at Griqua-town quarrelled among themselves because the Governor of the Cape had sent a political agent to Waterboer, a Bosjesman by origin, whereas Kok had always been in possession of supreme authority. Kok, therefore, with his party went off and formed another village ; a chief named Berend formed a third, and Waterboer remained head of Griqua-town.[1] It follows,

[1] Broca, *Hybridity*, etc. Blake's Trans., pp. 3, 4, note : compare also Godron, *De l'Espèce*, etc. ii. 354, 355 ; Waitz, *Anthropologie*, i. 206 ; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 1865, 320-324.

therefore, from this history, that the Griquas are by no means an instance of any continuous fertility among half-breeds. They have mixed with Hottentots, Bosjesmen, Kaffirs, Koranas, Namaquas, and Bechuanas, with probably additions of real Bastaards or Dutch Hottentot half-breeds, from time to time. They have consequently become almost a pure African race; and though they have increased very fast, this increase is due in a great measure to immigrants.

The pure Hottentot, says Lady Duff-Gordon in her lively letters, was almost extinct in the Cape in 1862; what one now sees are all Bastaards: 'These mongrel Hottentots who do all the work are an affliction to behold—debased and shrivelled with drink, and drunk all day long; sullen, wretched creatures—so unlike the bright Malays, and cheery pleasant blacks and browns of Cape Town.' She visited a Herrenhut colony of Bastaards, where the young men had 'a sort of blackguard elegance in their gait and figure which is peculiar to them; a mixture of Negro or Mozambique blood alters it altogether. The girls have the elegance without the blackguard look.' Like the pure Hottentot, they have high cheekbones, a flat face, are light yellow in colour, and have small hands and feet, but they are sometimes better looking, taller, and the hair not so woolly. These Herrenhuters were by far the most intelligent—equal, indeed, to the whites. A mixture of black blood often gives real beauty, but takes off from the 'air,' and generally from the intelligence.[1]

The Africanders, Dutch-Malay half-breeds of the Cape, are handsome, lazy, dirty, and dressy, but the colonists are not particularly industrious. The pure Malays, however, are bright and most industrious.[2] Lady Duff-Gordon also saw some half-breeds between a red-haired man and a black woman, frightfully ugly: 'The little monsters are as black as the mother, and have *red* wool. You never saw so diabolical an appearance.'[3]

Sir Richard Burton says of the half-castes of the West

[1] Lady Duff-Gordon, *Last Letters from Egypt, to which are added Letters from the Cape*, pp. 241, 270, 273, 308.

[2] *Ibid.* pp. 207, 224.

[3] *Ibid.* p. 260.

Coast of Africa: 'The most dangerous class is the mulatto; he is everywhere, like wealth, *irritamenta malorum*. The bar sinister, and the fancy that he is despised, fill him with ineffable gall and bitterness. Inferior in physique to his black, and in *morale* to his white parent, he seeks strength by making the families of his progenitors fall out.'[1]

The European-negro half-breeds, known as mulattoes, are said to be preferred for house-work in America, on account, as Sir Charles Lyell suggests, of their better education, since they have associated so much during childhood with the whites. In Guadeloupe nearly all the manufactures are in the hands of mulattoes; and some at least, says Cassagnac, are rich and industrious. In Peru many study theology, and most of the medical practitioners in Lima are mulattoes. This, however, is saying but little for their capabilities, since both professions there are compatible with great ignorance. A. de St. Hilaire considers the Brazilian mulattoes to be even superior, if anything, to the Creoles or native whites, except that they have not one spark of chivalry, and are as changeable of mood as their African parents. Nott asserts that mulattoes cannot endure physical exertion as Europeans do; and that the women especially are delicate, have many chronic diseases and miscarriages, and only produce weakly children. They are, he says, of lower viability than any other race of human beings in South Carolina; but at Mobile, New Orleans, and Pensacola (Gulf of Mexico) such was not so evidently the case, since their European parents were here generally of the Latin race, and not of the Anglo-Saxon. He further made the curious observation that the nerves of their limbs were a good third less in thickness than in any pure race, light or dark. Labat, who travelled over the Antilles more than a century and a half ago, says that the hair of the mulattoes is much less woolly than that of the negroes, and of a light chestnut colour; and he saw one at Cadiz with red hair. They are generally well made, vigorous, strong, skilful, and industrious; courageous, and impudent beyond imagination; are proud, false, devoted to pleasure and to thievery, and are capable of

[1] Burton, *To the Gold Coast for Gold*, ii. 36.

the worst crimes. The Spaniards, he adds, have no better soldiers or worse men. Demersay says that in Paraguay the negroes are preferred to mulattoes, who are proud and treacherous. The Spaniards have an old proverb, 'No se fie de mula y mulata.' Freycinet, too, says that in the Isle of France (île Maurice) they are proud and lazy, devoted to gambling and debauchery, soon squander any money their wives have brought as a dowry, make them jealous, and take no thought for the morrow. According to Dr. Hancock, the mulattoes of South America are perhaps not naturally inferior to their fathers, either mentally or physically, but certainly far superior to the primitive African race.[1] From all which it appears that the mulattoes are far better morally in South America than elsewhere, and there they have also the best position. Mulattoes of the same degree are seldom mutually fertile, according to Van Amringe, Knox, Hamilton Smith, Day, Nott, Etwick, and Long. Lewis, however, asserts that though mulattoes are weak and delicate, and their children are of low viability, yet they are as fertile together as Europeans and negroes, which is not saying very much; for, according to Hombron, negroes are more fertile with Indians than with Europeans, and Indians are more fertile with Europeans than with negroes. Seemann also says that the half-breeds are fertile among themselves at Panama, though the children are weakly; and Bachman knew of instances of mulatto families in Carolina and New York who have never crossed with either parent race, and have perpetuated themselves for five generations.[2] But the balance of evidence seems to show that mulattoes—the result of a first cross between a white and a negro—though not absolutely sterile together, are yet very nearly so; and even where a union of this sort does turn out fertile, there seems to be an irresistible tendency towards atavism—the child will resemble more nearly one of the pure races from which it is descended than its parents. Thus Burdach says that mulattoes return to one of the parent

[1] Waitz, *Anthropologie*, i. 198, 199; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 1865, 357-359; iii. 1870, 277, 279; Walker, *On Intermarriage*, p. 363; Broca, *Hybridity*, etc. Blake's Trans. pp. 33, 34.

[2] Waitz, *Anthropologie*, i. 205-207.

stocks about the third generation ; Knox says that every mulatto returns to one of the races from which he has sprung ; Livingstone says the same of the Portuguese mulattoes of Angola ; and M. Périer gives many other citations of authors who are not quite so explicit, but seem to say the same thing.[1] These observations, moreover, are very difficult to collect, since mulattoes only seldom intermarry among their own class, but form by their complicated intermarriages terceroons, quadroons, quinteroons, griffes, negritoes, etc., and thus can very well continue their race aided by constant additions of mulattoes.

The Mestisos, Cholos, or European-American-Indian half-breeds, are in Peru short, sallow, coarse-haired, with a low forehead, lazy, treacherous, and careless ; in short, more like their Indian than their European parents according to Raynal, Pöppig, Stevenson, and Botmiliau. In Chili they are often bigger than the Indians, but in their small feet and hands, in their hair, and flattish large-nostrilled nose, says Pöppig, they more nearly resemble their Indian parents. The Spanish-Guarani half-breeds are perhaps the best specimens of the Mestiso. Azara considers them somewhat superior even to the Spaniards of Europe in height, build, and whiteness of skin. D'Orbigny also considers that the European type prevails in these half-breeds, who 'almost rival the whites' in looks, while they are their equals in general intellectual power. The Spanish-Paraguay half-breeds are, according to Brackenridge, also superior to the Spanish Creoles. Ulloa asserts that the Mestisos of Concepcion are scarcely distinguishable from the Spaniards. Some of the Mestisos of La Plata, says De Moussy, are magnificent men, but so, according to D'Orbigny, are their parents, yet only some of these half-breeds are 'magnificent.' According to Spix and Martius, Tschudi, and Humboldt, the Mestisos are in character superior to the mulattoes, less changeable, and more industrious, both in Brazil and Peru. Koster says they have more self-respect, and are braver than the mulattoes, but they are nevertheless also weak, indolent, soft, and pitiful beings. Both the Mestisos

[1] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, iii. 1870, 270–273.

and mulattoes, says Pöppig, in the stock but probably truthful phrase, inherit the vices of both parents with the virtues of neither. With the pride of the whites exaggerated to a mania, he combines the laziness and apathy, the changeability and improvidence of the Indian. He is as licentious as the mulatto, and as tyrannical to the Indians as the mulatto is to the negro; but in mechanical things he possesses a great talent for imitation. Raynal says that in Mexico they are very intelligent, witty, and imaginative, but without the bravery of the natives, or their skill, or their love of liberty. They have no aptitude for work, nor application to accomplish any great work, neither have they the patriotism of the Spaniards. Gambling and revolution are their chief delights.[1] A correspondent of the 'Times' describes the population of Los Angeles as mainly composed of Spanish-Indian half-breeds, a strong and intelligent people, who still retain much of the pride and laziness of their progenitors. The result is the occasional production of characters like that of Tiburcio Vasquez and Charez, two notorious brigands who recently laid the country under contribution, and who, with their followers, committed murder and outrage until one was hanged and the other shot.[2]

They seem, however, to be tolerably fertile. Jourdanet estimates the half-breeds at one-third of the population, while the whites scarcely form a tenth in Mexico. In Nicaragua, says Waitz, there are 145,000 Mestisos, 80,000 Indians, 10,000 whites, and 15,000 negroes. In Paraguay the Mestisos marry mostly among themselves, and their offspring form the greater part of the so-called Spanish population. We have seen that Hombron considers marriages between Europeans and Indians as more fertile than those between either and negroes.[3]

The European-North-American-Indian half-breeds are not at all numerous, for the various nationalities in North America do not mix so much as in the south. Kohl believes the unions between French settlers and Indians to be very fertile, and their daughters especially are more like their

[1] Waitz, *Anthropologie*, i. 193, 200, 202; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 342–346.

[2] The *Times*, April 18, 1876, p. 4.

[3] Waitz, *ut sup.* p. 209.

French parents. If these half-breeds, however, marry among themselves they usually have only daughters, and their children are often stunted and of low viability. The Scotch-Indian half-breeds, he continues, form a powerful race. Barnard Davis also says that at the Red River settlement the half-breeds are handsome and fertile. Dr. Landry, of Quebec, however, says the half-breeds of that neighbourhood are peculiarly subject to phthisis, and the greater number die early.[1]

The Paulistas, like the Griquas, are a half-breed race, who have bred so much with the natives of the country that they have in reality become a pure race. They are thought to have been originally half-breeds between the Portuguese and people of Guiana, and are said to be brave, fierce, strong, and cruel. Muratori says that from the unions between the Portuguese and Indians were born children having all the faults of both parents and the virtues of neither ; and, though of Portuguese origin, they were considered to be unworthy to bear that name, which they dishonoured by their infamous conduct. He adds that their country was the asylum of all Portuguese, Spanish, English, Dutch, and Italian criminals ; that they had depopulated the country round about them, and that during the space of 130 years they had carried more than two millions of Indians into slavery. Froger, who wrote before Muratori, in the year 1695, says they took their origin from criminals of all nations. They go, he says, in bands of forty or fifty together, travel over all Brazil, and come back after four or five months with sometimes over three hundred slaves. Their courage certainly is indisputable, and their character no less so. The Jesuits of Paraguay represent them as a robber race of the worst type. Lacordaire says that for a century and a half the Paulistas were on land what the Buccaneers were on the sea. They continually attacked the Jesuit missions, robbed their churches, and carried off all their Indians. Dom Vaissette, Charlevoix, De Surgy, Raynal, D'Orbigny, Page, and De Moussy, all agree in these accusations ; and though Gaspar, writing in 1797, says that the elevation of their character, the delicacy of their sentiments,

[1] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 1865, 369, 370.

their probity, their industry, their public spirit, cannot be a heritage from a gang of ruffians and vagabonds, he must mean this in the sense of Byron's Lambro :

> ——He was the mildest manner'd man
> That ever scuttled ship or cut a throat;
> With such true breeding of a gentleman,
> You never could divine his real thought.

Mr. Bigg-Wither, even so late as 1878, says of them : 'The mixture of the two bloods has produced a nature savage and bloodthirsty as a tiger's and more cruel than a cannibal's.' The population of St. Paul is estimated at 30,000, including individuals of all colours : some of them who have kept themselves from intermarriage with the Indians, says D'Orbigny, are whiter even than the Creoles ; others are of all shades from light yellow to coffee-colour. They still show traces of their Indian origin in their high cheekbones, small black eyes, and hesitating look.[1]

The Gauchos are another half-breed race of South America, of the same description as the Paulistas, and thought to be descendants of Spaniards and Indians. Azara describes them as robust and healthy, hospitable, but dreadfully addicted to gambling, and utterly careless of human life.[2] Altogether, the general consensus of evidence agrees with the conclusion of a correspondent of the 'Times,' writing from Rio Janeiro, 'that in the blending of races colour is apt to deepen, and that the mixed has little power of multiplication, unless it draws from the primitive sources at every new generation. Finally, that although the mixed race, mulatto, quadroon, or octoroon, may individually attain great beauty, and even develop rare intellectual faculties, it exhibits in the mass the bad rather than the good qualities of the parent stems, and on the lowest cunning and knavery of the white it engrafts the supine indolence and the stolid improvidence of the black.[3]

The Zamboes, or offspring of negroes and American

[1] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 1865, 346–351 ; T. P. Bigg-Wither, *Pioneering in South Brazil*, ii. 322.

[2] See also Page and Demersay. Périer, *ut sup.* pp. 351–355.

[3] The *Times*, September 20, 1880.

Indians, are, according to Dr. Hancock, remarkable for their physical superiority over their progenitors on either side, and this, he says, 'is a well-known fact.'[1] Lavayssé also describes them as superior in mental power to either parent and to the Mestiso; yet he says that in Caracas they are considered the worst class of the population; although A. de St. Hilaire praises those of the Paranahyba district, Waitz points out that nearly everywhere they have the reputation of being very bad characters. In Lima, says Tschudi, four-fifths of the worst crimes are committed by Zamboes.[2] St. Venant describes them as a debased race, whose chronic state of misery, laziness, and of apathy among all the means to wealth, it is impossible to paint. In Peru, says Lacroix, they form the worst part of the population; they are cruel, vindictive, implacable, stupid, and quarrelsome. In stature they are rather tall, and, like the Indians, have scarcely any beard. Their hair is distinctive—indeed, it has been described to me in conversation as that of the Indian and negro commingled, but each hair like that of one of the parent races. Radiguet describes the Zambo as often vigorous and tall; his woolly hair comes down over his low forehead, his eyes are bright and intelligent, his thick lips (always half open) disclose a set of brilliantly white teeth. His face is not pleasing; though expressive and animated, it is often hard and scoffing. In Columbia, Famin says the Zamboes are fierce, thievish, and little susceptible to civilisation; they are robust, and their skin is a dark copper-colour. Squier observed that most of the criminals of Nicaragua were Zamboes, and he describes them as bigger and better made than their parents, without possessing any of their good qualities.[3]

The Cafusos, a half-breed race like the Paulistas, but originating from negroes and Brazilian Indians, according to Spix and Martius, live isolated in the forests of Tarama. They are slender, muscular, weak-legged, and of a copper-colour; their eyes are slightly oblique, and more frank-look-

[1] Walker, *On Intermarriage*, p. 363.
[2] Waitz, *Anthropologie*, i. 200, 201.
[3] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 1865, 363-365.

ing than those of the Indians ; their hair, not so woolly as that of the negro, and less lank than that of the Indian, stands up like that of the mop-headed Papuans of New Guinea. D'Orbigny says that the Cafusos do not live perfectly isolated ; and Broca points out that though the Cafusos are said to marry among themselves, we know very little about them, or how much they may have intermarried with the parent stock.[1]

The Negro-Carib half-breeds were formed by the intermarriages of runaway negroes and Caribs, after they were settled together on the islands of Dominica and St. Vincent in 1660. After many struggles the half-breeds obtained the mastery over the true Caribs, who were most of them compelled to fly, so that in the year 1763 there were 3,000 black Caribs, and only 100 red or true Caribs. These half-breeds also found time to massacre all the white colonists, and were all transported by the English to the island of Roattan, whence, with the help of the Spaniards, they escaped to Honduras. Here, says Waitz, they always intermarried among themselves, and are very able and active labourers.[2]

In the Cherokee republic it is noteworthy that the half-breeds between the North American Indians and the negroes do not possess the franchise.[3] Of all half-breeds in Peru, says Stevenson, those between negroes and Mestisos or negroes and mulattoes are by far the most abandoned. Yet Brackenridge asserts that the half-breeds in Peru between the Indians and Mestisos are superior in everything to either parent.[4] Lacroix endorses the opinion of Stevenson on the negro and mulatto half-breeds, and adds that these are more robust than the mulatto.[5]

The Negro-Hottentot half-breeds, according to Le Vaillant, have an agreeable figure, and their skin is of a much less disagreeable colour than that of the Bastaards. They are much sought after as servants ; for, with great activity and

[1] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, ii. 1865, 366 ; Broca, *Hybridity*, etc. Blake's Trans. p. 3.
[2] Waitz, *Anthropologie*, iii. 353–354.
[3] *Ibid.* iii. 295.
[4] *Ibid.* i. 201, 202.
[5] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 364.

docility, they combine a fidelity which is not to be found in any other half-breed.[1]

The Darfur women and Arabs produce offspring which are feeble and of low viability, according to Mohammed ibn-Omar el-Tounsy; while in the same place these pure races are among themselves perfectly fertile.[2] The people of Fezzan are a mixed race of negroes and Arabs, tolerably well formed, but ugly, with small eyes and protuberant lips. They are selfish, insincere, inhospitable, and wholly destitute of either physical or mental energy or enterprise.[3]

The Maroons of Surinam are also a hybrid race between negro runaways from the Dutch estates and native tribes. They are a vigorous and athletic set of men, active and enterprising, and superior to either parent stock.[4]

The mixed breed between Persians and Arabs, inhabiting the Bahrein or Aval Islands, possess 'more of the indolence and cunning of the former than the bold frankness of the latter.'[5]

The Arab-Abyssinian half-breeds are said by Dr. Pruner to be a fine race,[6] yet the Memlouks never succeeded in propagating their race in Egypt. This may have been due to the effect of the climate, for Lane says that European women in Egypt are often barren, and the children of foreigners from comparatively cool countries seldom live, even though the mother be a native.[7]

The Kuruglis, or half-breeds between Turks and Moors are superior even to the Turks, says Wagner, in strength and beauty.[8] Indeed, the Turks themselves and the Persians are often cited as examples of the advantage of crosses.[9] It is necessary, however, first to show that the assumption that

[1] Waitz, *ut sup.* ii. 305; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 322.

[2] Waitz, *ut sup.* i. 203; Périer, *ut sup.* 1870, iii. 281.

[3] M'Culloch, *Geographical Dictionary.*

[4] Walker, *On Intermarriage*, pp. 363, 364.

[5] M'Culloch, *Geographical Dictionary.*

[6] Waitz, *Anthropologie*, i. 202.

[7] Lane, *Modern Egyptians*, i. 234; Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1870, iii. 229.

[8] Waitz, *Anthropologie*, i. 202.

[9] Walker, *On Intermarriage*, p. 240; also Bory de St. Vincent, Morel, Chardin, and Bomare, cited by Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1860, i. 73, 74.

the Turks were originally an ugly Mongol race is a true one, and De Gobineau points out that the only evidence in favour of this theory is the affinity of language, which, though valuable enough when corroborated, is not of much value alone. But the traditions point to an origin from Central Asia. They always speak of the Turks as a handsome race ; and, indeed, the people of Central Asia, and between Central Asia and Europe, are nearly all handsome races.[1] Even supposing it to be an unquestionable fact that the Turks were originally an ugly Mongol race, the supposition that their beauty is the result of crosses with Greek, Georgian, and Circassian women is clearly untenable, since only the upper classes can afford these wives, and the small fecundity of the polygamous classes is too notorious[2] to allow of the belief that these few rich people could have influenced the whole race.[3] Even Waitz abandoned the theory that their beauty was due to crosses, and attributes it to the influence of civilisation.[4]

There are yet a few more half-breeds, an account of whom I have met with. The Chinese-Cambojias are said by Gutzlaff to be productive at the first generation when they intermarry among themselves, but grow gradually more and more sterile, until at the fifth generation they are perfectly barren.[5] The Chinese-Tagal half-breeds are the sole capitalists of the Philippines ; they are economical, prudent, patient, and manage to do a good business where the Spaniards ruin themselves.[6] The same, however, might be said of their Chinese parents.

The European-Greenland Eskimo half-breeds resemble more nearly the European parent in feature, and the Eskimo in moral qualities.[7] At present, says Waitz, 14 per cent. of the population are half-breeds.[8] They generally grow up

[1] De Gobineau, *De l'Inégalité des Races Humaines*, i. 216 *et seq.*

[2] See the *Trans. of the Brit. Association*, 1872, Stat. Section, a paper read by Mr. H. Clarke.

[3] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1860, i. 73, 74, who cites Pritchard, De Salles, Grellois, and Pouchet.

[4] Waitz, *Anthropologie*, i. 83, 84.

[5] Broca, *Hybridity*, etc. Blake's Trans. p. 43, note 1.

[6] Périer, *ut sup.* 1865, ii. 303.

[7] *Ibid.* p. 370.

[8] Waitz, *Anthropologie*, iii. 301.

complete Greenlanders in habit. The Greenland folk-tales show that the half-breeds between Greenlanders and Canadian Indians partake of the size of their Indian parents. 'Although,' says one story, talking of a half-breed, 'he was said to be a smaller man than the other inlanders, he was at all events larger than our people ; his back was as broad as that of two others put together, and his height very little less than two people on the top of each other.' And again, in another tale: 'A huge man at length entered, who said he would assist him, declaring that he had sprung from the coast people,' that is from Indians and Eskimo.[1]

These observations are sufficient to show that crosses are not so beneficial as they are generally supposed to be. In them we see none of that wonderful beauty, fertility, and moral and physical strength, surpassing the races on both sides from which they are derived ; nor do we see the mixed races elbowing away the pure in the great struggle for existence. We see, on the other hand, the persistence of the great law of inheritance, as exemplified in that atavism which leads back a hybrid race to the parent stock from which it is sprung. We see how simple is Nature's method of reproduction in the fact that differing races are not absolutely barren together, though the one race has not been accustomed to produce offspring of another kind. We see, further, that if Nature is led, and not dragged, she will sometimes allow of the production of new types of men. New races may be formed by the more gentle fusion of two or more others, by the intermarriage of the half-breeds sometimes with the one parent stock, and sometimes with the other, or by a cross with another race not extremely different, and subsequent breeding in-and-in. Though the evidence detailed above leads us to believe that the generality of half-breeds are worse than their parents, and incapable of continuous reproduction among themselves, some individuals may be better than their parents, and even have the power of indefinite procreation among themselves. The instance given by Burdach of a mulatto

[1] Rink, *Tales and Traditions of the Eskimo*, translated by Robert Brown, pp. 77, 119, 269.

family of New York, which was still fertile after five generations of marriages with mulattoes, the family of Da Souza, and the half-breeds of Norfolk Isle,[1] are sufficient to show that indefinite procreation of half-breeds is not impossible. Yet that evidence emphatically shows that a cross in itself is not a good thing. As in other realms of the organic world, the body of the half-breed is least often injuriously affected, though it may be weedy and inharmonious; but the brain and reproductive system are too often seriously hurt. Waitz attempts to excuse these unfortunate beings on the score of their exceptional position, rejected by the superior race, and themselves rejecting the inferior;[2] yet we do not find them much better where they are actually the most numerous class, as in South America, and might therefore be reasonably expected to find sufficient consolation in their own society. Indeed, half-breed races dwelling apart from the superior race, such as the Paulistas and Griquas, have been notorious for their depravity as long as they could reasonably be held to be half-breed races. Mr. Darwin attributes this ferocity and depravity of character to atavism, which causes a relapse to the type of their savage ancestors[3]—a very probable cause, but hardly sufficient, it appears to me, to account for it alone, without the supposition that the mind is as much affected by the mixture of the characters of the two races as the hair of the Mestiso, a mixture without a blending. Attempts have also been made to account for their sterility by a supposition that this is due to the injurious effects of the climate;[4] but in most places both pure breeds are perfectly fertile among themselves, as the English and East Indians, or the Arabs and Dafurians, while the crosses are as injurious as ever. There is an absence of homogeneity, an inharmoniousness, an unfittingness the more obvious as the races are more distinct, just as the welding of two different metals is more difficult than the welding of two pieces of the

[1] See pp. 141, 142, 304 of this work.

[2] Waitz, *Anthropologie*, ii. 305; and Virey, cited by Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 359.

[3] Darwin, *The Variation of Animals and Plants*, etc. 1875, ii. 21.

[4] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1870, iii. 227 230.

same. Thus the Saxon and Latin races of Europe differ so little that the produce of their unions is as good, perhaps, as the pure race; the European races are more similar to the American Indians than to the negro; hence we find that the Mestiso is as a rule superior to the mulatto, who is, perhaps, the worst of all. In short, the greater the difference between the two parent races, the worse will the produce be; and we must fully agree with the apothegm of an observant Portuguese gentleman quoted by Livingstone, that 'God made white men, and God made black men; but the devil made half-castes.' [1]

[1] Livingstone, *Zambesi*, p. 50.

CHAPTER VIII.

WHY ARE THERE TWO SEXES?

THE most powerful deductive argument of those who affirm the harmfulness of the marriage of near kin is that if these marriages are not harmful, and if crosses are unnecessary—

> Oh, why did God,
> Creator wise, that peopled highest heaven
> With spirits masculine, create at last
> This novelty on earth, this fair defect
> Of nature, and not fill the world at once
> With men as angels without feminine,
> Or find some other way to generate
> Mankind?

Indeed, if the ultimate object of the two sexes was not to ensure crosses, what was the ultimate object?

To examine this question properly we must first consider what are the main features of the organic world, in order that we may, by comparative study, judge of the relative importance of the functions; for there is the danger that any one of these may be assigned too high a place in the hierarchy if taken alone; or, on the other hand, that it may be neglected as unimportant. Now, the organic differs from the inorganic world, not in the fact that an organism lives, while inorganic matter does not; for how shall we define life? not in that one reproduces itself, while the other does not; for a crystal reproduces itself, and minerals are formed anew: but in the fact that the organic world has to struggle for existence, and any unsuccessful organism is liable to extermination. The whole aim of every organic being, from the lowest to the

highest, is to live and multiply itself, and to become immortal in the sense of reproducing itself, at whatever cost to, or rather, wholly irrespective of any cost to other beings—a selfishness which is only controlled by the like aims of other organic beings, and by the difficulties imposed by passive inorganic matter. The primary aim, therefore, of every organic being is to procure food; then to grow, spread, and disperse itself. Speaking generally, every organism, even when not subject to competition from others, and independently of any decay of its functions, will as it increases become its own competitor, as a plant in a flower-pot may use up all the nutriment, or a yeast-plant may transform all the sugar in a liquid. Or circumstances may become passively adverse. The organism must therefore have the power of either moving itself, or of throwing off parts of itself, or of ceasing to live for a time—hibernating, as it were, until circumstances again become favourable. Without such powers it must cease to exist. Hence we find that all organisms possess these powers of division and dispersion, whether by means of spores or germs, or buds, or subdivision; or even the whole organism may dry up and be blown about at the mercy of the wind, ready to develop again after the first shower, or nutriment may be stored up, or life practically suspended during the cold of winter. It is clear that the more the organism is subdivided, so long as the subdivision is not in itself hurtful, the less likely is that organism to become extinct; and it is also clear that if the whole organism were to be subdivided and scattered about, the original individual would cease to exist, and would therefore cease to live and spread. The aim of every organism will therefore be to secure the dispersion of the greatest number of portions of itself, as buds, spores, or in any other form of germ capable of becoming like itself, at the least expense to itself as an individual.

But besides this imperative need of dispersion, there is another and somewhat antagonistic need of defence, against both active competitors and passive adverse circumstances. Dispersion is in itself in some degree a defence, because, where an immense number of buds or spores are widely dis-

persed, there are more chances that some will escape adverse circumstances and survive. Subdivisions in the shape of spores, however, though cheap to produce on account of their excessive minuteness, are not always the least costly in the end, since vast numbers are destroyed owing to their inability to resist temporary adverse circumstances. Defence, therefore, in the shape of a store of nourishment to supply the spore until sufficiently developed to support itself, or in the shape of a protective envelope will be useful, but can only be supplied at increased physiological cost to the parent. Now, it seems to be a law of nature that the more highly developed an organism is, the longer does it require to grow from the germ to the mature stage; the longer, therefore, is it unfit to cope without assistance with adverse circumstances, and the longer will it need parental defence. That is, we must expect to find a greater advantage to organisms as they increase in complexity, in spending what physiological substance they can spare, rather in the protection of such young they do produce, than in the production of an immense number of young. And this is precisely what we do find. We find that besides the method of reproduction by budding common to nearly the whole vegetable world and part of the animal world, dispersion is secured in all by means of spores so formed as to secure easy dispersion, and more or less fitted to resist adverse circumstances. The simplest form we find in the lowest of the thallophytes, mere simple cells, which are dispersed in vast quantities. Upwards from these, a gradual differentiation and continually greater elaboration may be traced, from spores that develop at once into the parent form, to spores that first develop into a sort of primitive plant which we may liken to the larval stage in the insect, and which in its turn produces the parent form. The spores, again, from exhibiting an indifference to conjugation, showing that they have no real sexual difference, begin to show real sexual differentiation. The female spore drops its motility, increases in size and protoplasmic content, and at last ceases to be separated from the parent plant before the process formerly gone through in the intermediate plant is completed.

They are besides frequently furnished with a feeding-bottle by the careful parent, and in this state are known as seeds. The male spore, on the other hand, although it also has gone through the same stages of development, receives no store of food, and in most plants retains the system of distribution before conjugation with the female spore. As in the lowest plants, it is produced in immense quantities (with some significant exceptions), and scattered about in the same prodigal profusion; while the perfect seed has received a structure which permits it only to develop at the right time, a supply of provisions to start it in life, a defensive envelope, and beautiful and most varied contrivances for securing its dispersion, whether wafted by the wind on feathery plumules, as in the dandelion; on wings, as in the ash; rolled along in balls by the wind, as in some gourds; floated away on water, as in the cocoa-nut; hooked to the fur or feathers of animals, like all sorts of burs; carried by them internally, as in the case of the vast majority of fleshy fruits, and also in the case of some grains and nuts; or actually carried away and planted, as squirrels frequently do with nuts and acorns, and land-crabs do with the seeds of the iron-wood tree.

Essentially the same law of development of the method of generation obtains in the animal world. From the common ground of the Protophyta and Protozoa, which in the lowest forms are scarcely distinguishable, the same development is seen as we rise in the scale, from the formation of spores which may or may not coalesce, combined with fission and budding, through intermediate stages in which the embryo has an independent life, and gets widely distributed, to the perfect sexual form, in which all these processes are concealed, and distribution of the germ does not take place before the development of the perfect young organism.

Why and how were two sorts of spores originally produced? and why do they conjugate?

Mr. Herbert Spencer explains this by the theory that the reproductive cells have arrived at a state of molecular stability which is upset by their union because they are different from each other; and this stability would not be upset if they were

not different. He argues that the reproductive cells must have arrived at this state of stability, because the rest of the organism has arrived at this state,[1] and hence, if his theory be true, the more alike the male and female germs are, the less likely are they to develop after coalescence. There are, however, objections to this theory, which appear to me to be decisive. In the first place the so-called male and female planogametes, or spores, are primarily exactly similar. They may unite in pairs, or they may not, and each may develop without any conjugation. That there is no polar distinction between gametes derived from different plants, I am not prepared to maintain. But this again depends upon what is understood by polar difference. The fact that has to be accounted for is that in some cases conjugation can only take place between planogametes derived from distinct gametangia, which might of course be accounted for by the supposition that a 'difference' of polarity, only to be understood in the dynamical sense, must exist between gametes derived from different sources; but the ground for such a theory is merely the theory that it is put forward to prove, and it must fail in proportion as other theories succeed. So little ground is there for it that thinkers like Strasburger,[2] Weismann,[3] and Balfour[4] agree in holding that the germs in the lowest organisms at least, even where there is apparent sexuality, are not differentiated. Further, in all cases, morphologically speaking, the male and female germs are identical. Lastly, as Mr. Spencer notes himself,[5] crossing is by no means constant. But this is not nearly strongly enough put: I would rather say that crossing seems to be a matter of almost indifference. While the male germ seems only to lose its power of independent development as the female germ increases in relative size, the latter seems never to lose its power of independent development except in the very highest organisms, and even in them continually betrays a tendency to develop of itself. In Botrydium, where sex

[1] Spencer, *Biology*, i. 274-279.
[2] Strasburger, *Befruchtungsvorgang bei den Phanerogamen*, pp. 154, 159.
[3] Weismann, *Continuität des Keimplasmas*, pp. 118, 119.
[4] Balfour, *Embryology*, i. 9.
[5] Spencer, *ut sup.* i. 280.

appears almost for the first time in the vegetable world, the older spores develop without conjugation. In some Fungi and certain Phanerogams it also appears. 'It is remarkable,' says Professor Vines, 'that this is characteristic of plants which are either parasitic or saprophytic in habit, such as the Fungi and certain Phanerogams (Balanophoreæ, Loranthaceæ, Santalaceæ), but we are unable at present to give any satisfactory explanation of this interesting correlation.'[1] In the animal world, where the sexes are more generally separated than is the case among plants, the asexual method of reproduction extends frequently over several generations before sexual generation takes place, and parthenogenetic reproduction is comparatively more frequent than in the vegetable world. 'There can be little doubt,' says Balfour, 'that the ovum is potentially capable of developing *by itself* into a fresh individual;'[2] and he considers that if the polar cells were not extruded from the ovum, parthenogenetic development would be always possible.[3] What is particularly significant in this respect is the occasional attempt at parthenogenetic development of the ovum in the higher animals, which has been shown to occur in frogs' eggs, hens' eggs, and even in mammals.[4] Professor Weismann, while agreeing with Balfour that all ova are capable of self-development without the upsetting of any molecular stability, does not agree with Balfour that they do not develop owing to the extrusion of the polar cells, since it has never been demonstrated that unfertilised ova do not extrude the polar cells;[5] and, further, in the bee the same eggs may or may not be fertilised; while in either case they develop;[6] hence, and for other reasons, he rather considers that fertilisation merely supplies further nutrient plasma, and, incidentally, also germ plasma.[7]

Professor Weismann considers that germs of male or female sex are of equal physiological value, and do not differ in polarity or in anything else, except perhaps their

[1] Vines, *Lectures on the Physiology of Plants*, p. 649.
[2] Balfour, *ut sup.* i. 64.
[3] *Ibid.* p. 62–64.
[4] See Balfour, *Embryology*, i. 64, note; and Weismann, *Continuität des Keimplasmas*, p. 90.
[5] Balfour, *ibid.* p. 63; Weismann, *ibid.*
[6] Weismann, *ibid.* pp. 89, 90.
[7] *Ibid.* p. 92.

histogenic content.[1] The union of germs from two sources was at first, according to him, merely accidental; which may well be, seeing the universal tendency in nature of like substances to become one, such as two drops of mercury, water, or portions of metal, like two pieces of lead, which only require to be brought into real contact to unite into one piece; and this union began to be useful in enabling weak germs, that is, germs that through adverse circumstances had become weak, to develop.[2] However begun, he points out that the great value of the commingling of different tendencies of development would make it nearly universal. Nature has by these means a choice of characters from which to select the most suitable: for he does not consider that acquired characters can be inherited at all. The reproductive plasma is subdivided and passed on from parent to child, just as a potato is usually cultivated; and remains entirely unaffected by any acquired habits of the organism in which it is lodged, and from which it derives its nutriment for growth.[3] The only time that the organism can transmit acquired tendencies is when it reproduces itself by fission; and perhaps afterwards, when reproduction by germ plasma is usual, only by external circumstances continually acting for long periods.[4] By the commingling of germs from two organisms variation becomes possible at once, because nature may develop characteristics of either organism in the progeny in any conceivable proportion, and in this way so many tendencies may be inherent in the germ plasma that almost any development becomes possible within certain bounds.[5] Without it variation with all its vast advantages would be impossible, as is the case, he maintains, in true parthenogenesis.[6] He scouts the 'rejuvenescence' theory altogether: how can two effete bodies restore each other's vigour? You cannot make a something from two nothings.[7] The idea has probably arisen from the usual necessity of fertilisation before reproduction

[1] Weismann, *Continuität des Keimplasmas*, pp. 114, 118.
[2] Weismann, *Die Bedeutung der Sexuellen Fortpflanzung*, p. 52.
[3] Weismann, *Continuität*, etc. pp. 5–7, 58, 59.
[4] Weismann, *Die Bedeutung*, etc. pp. 28, 38.
[5] *Ibid.* p. 29 *et seq.* [6] *Ibid.* pp. 30, 31. [7] *Ibid.* p. 46 *et seq.*

can take place, and consequent belief that parthenogenetic reproduction could not go on for ever. But of this there is no proof, or even any sign, and it is contrary to the fact that the eggs of some insects develop whether fertilised or not. For if an egg can develop without fertilisation, fertilisation cannot be necessary for development.[1]

The test of a theory is in its power to explain the facts, and with the exception of the proposition that the germ plasma is entirely unaffected by acquired tendencies of the individual this theory seems to me better to satisfy the phenomena of reproduction than any other with which I am acquainted. It reconciles some of the most perplexing contradictions: for instance, the necessity in some cases, and uselessness in others, of the union of germs derived from different organisms; it explains the use of temporary fusion of organisms before fission; it explains the need of sexual reproduction in the higher organisms where variation is important, and its frequent absence in the lowest organisms which are so simple in function that continual variation is needless; it also explains the occasional need of crosses when there is alternation of generation with long continued asexual reproduction.

The late Mr. Darwin's theory of *Pangenesis* very nearly agrees with the theory now propounded by Professor Weismann. They both of them hold that there is an all-pervading germ plasma, which, in those organisms that cannot reproduce mutilated parts, is segregated out or concentrated in the germ-bearing organs; no real difference between the sexes is assumed by Darwin, any more than by Weismann, the only point in which the latter differs is, that his germ plasma is one and identical through all ages; as a potato, propagated by cuttings from the tuber, is the same individual through many generations;[2] while Darwin considers that each somatic cell throws off minute germs which are congregated chiefly in the sexual organs.[3] Nägeli also considers an unfertilised

[1] Weismann, *Die Bedeutung*, etc. pp. 46, 49, 50.
[2] Weismann, *Continuität*, pp. 58, 59.
[3] Darwin, *Animals and Plants under Domestication*, 1875, ii. 369-399.

germ fails to develop only from want of sufficient material.[1] Strasburger is of the same opinion.[2]

Now, we are not called upon by our subject to make up our minds as to the nature of the process by which a germ cell becomes a complicated organism similar to the one from which it was derived: the only object before us is to find some satisfactory reason for the differentiation of the simple spore capable of reproducing the parent form alone, into two spores only capable of doing so in conjunction. One consideration alone will convince us that this division is a great gain to the organism, namely, the chance that two such spores may not meet: a risk which it needs a considerable advantage to compensate. Another, as Professor Weismann points out, is the gain where every spore can reproduce itself, in place of having to combine with another before it can reproduce the parent form.[3]

In the earlier portion of this chapter we saw that the necessity for distribution was only second in importance to the powers of reproduction and the assimilation of food; on the other hand, we do not see that the conjugation of a male and female germ is of fundamental importance, still less that there is any constant necessity of sexual reproduction, and least of all that in the latter case there is any essential need of differentiation between the sexual elements. True it is that many writers do believe a differentiation to be necessary, but most of those who have deeply studied the phenomena of fertilisation have come to the conclusion that a differentiation such as that supposed by Mr. Spencer does not exist, and that the essential process is a sudden addition to the germ of material which induces the subdivision of cells and building up of the embryo.[4] In those organisms which produce several generations asexually, and at last produce a sexual generation, we always find that the produce of this last generation is not intended to develop immediately; and we may well believe that the addition of plasma indicated by the coalescence of

[1] See Vines, *Lectures on the Physiology of Plants*, p. 657.
[2] Strasburger, *Befruchtungsvorgang*, etc. p. 159.
[3] Weismann, *Die Bedeutung der Sex. Fortpfl.* pp. 57, 58.
[4] Weismann, *Contin. des Keimplasmas*, p. 98.

two germs is necessary to secure a choice of variations under changed circumstances.

In short, the almost absolute morphological identity of all germs, and their original identical power of development, leads us to believe that any difference in size or form between them is not due to a difference of nature, but to a division of labour which took place to secure greater perfection and economy in reproduction. All the other functions of the body are divided and subdivided as we rise in the scale of creation, until from the simple sack of the Medusa which may be turned inside out and still perform all the functions of the body as before, eating, feeling, breathing with no special organs, we come to the mammal who requires lungs, liver, kidney, skin, with all their special attendant and highly differentiated cells, to perform the simple function of removing waste products from the blood. Are we to suppose that of all functions of the body one of the most fundamental and important should alone remain unspecialised? Is it not more rational to see in the division of this function between two independent organisms the utmost possible specialisation, a specialisation which is only possible because the function is discontinuous, unlike the other functions of the body, and which could not be specialised any further in that direction, because if sex were divided among more than two independent organisms the chances of meeting of the right sex, in place of being equal as now, would be lessened out of all proportion to the gain in subdivision?[1]

This explanation is further confirmed by the consideration that the necessary distribution of germs would naturally lead to this form of subdivision of labour in reproduction. Meeting by chance, and being of identical constitution, these motile spores coalesced; their united contents would naturally show increased vigour, the necessary constitution of a germ which serves to differentiate it from an ordinary somatic cell, namely,

[1] The possibility of two sexes, *a* and *b*, meeting are, *a* may meet *a* or *b*. But in the case of three sexes in place of *a*, *b*, and *c* meeting, the following combinations may meet; *aaa*, *aab*, *aac*, *abb*, *acc*, before we have the combination *abc* needed; that is, the chances are 5 to 1 against *a*, while the benefit derived by subdivision is only multiplied by 3. In the case of four sexes, *abcd*, the chances against *a* meeting *bc* and *d* together are 19 to 1.

excess of formative plasma with its governing nuclei, would be strengthened, and the tendency to repeat the process in succeeding developments would be created. Had it not been for this, the whole tendency to specialise function would have worked in the direction we see exemplified in the macrospores, namely, a lesser subdivision of the reproductive plasma in the parent, with the result of a lesser formation of spores, but, as we have seen, the two processes are carried on concurrently. A balance is struck, as it were, between the tendencies to cheap and vast production, and the tendency to more expensive and lesser production. Every stage of development of the embryo is capable of dispersion, taking the organised world as a whole ; first the simple spore, then the unfertilised spore, the fertilised spore, the larval stage, the finished stage, and lastly the finished and nearly full-grown stage. But the earlier form is preserved in a manner concurrently with the later, and in most cases the so-called male germs are this earlier form. It is true that generally they are incapable of development by themselves, yet even then their dispersion is a gain. For of two individuals of the same kind if one, *A*, produced more motile spores than were necessary to fertilise the more highly developed resting spores that it also produced, the excess of motile spores might usurp the functions of some of those produced by *B*, and fertilise some resting spores of *B*. The progeny of *B* would many of them then be half-breeds, and if the progeny of these were again fertilised by spores from *A*, and so on, the produce of *A* would gradually supplant the produce of *B*.

The argument, then, in favour of the real identity of the male and female germs is exceedingly strong. It is the only theory which explains the lowest forms of reproduction, and especially the return to parthenogenesis in organisms in which there is, or has been, division of sex. It is the only theory which is consistent with the known morphological development ; and it is the theory to which investigation as it advances more surely points. Against it there are only two classes of argument of any weight : the first that in-and-in breeding is injurious ; the second, that hermaphrodite or-

ganisms of the higher sort in plants and animals are generally so constituted either that they cannot fertilise themselves or that self-fertilisation is the exception.

In some of the lowest organisms, such as Ulothrix or Acetabularia, a planogamete will only unite with another from a different gametangium ; and in Dasycladus, only with one from a different individual.[1] Some flowers avoid self-fertilisation by ripening the one set of organs before the other; some by having the styles or stamens so long that they do not fertilise each other ; in some the different flowers produce only one sex ; in some the different plants produce only one sex, and are no longer hermaphrodites ; and in some the pollen of the same flower has not the power of fertilising it, although it will fertilise another perfectly similar flower. Again, in many flowers there are most beautiful and, physiologically speaking, most expensive contrivances for ensuring cross-fertilisation by means of insects. Looked at apart from all morphological history, these facts would prove that self-fertilisation must be a disadvantage, and we should be confronted with the dilemma that while crosses appeared to be of the greatest importance in the vegetable world, only in the most highly organised plants are special means taken to ensure even occasional crosses. In the light, however, of our theory of the value of distribution, the necessity for variation, and of the division of labour, all these facts no longer present any difficulty. The phanærogams have not developed their flowers to their present form in order that they might secure cross-fertilisation, but on account of the advantage, at first accidentally secured, of wider distribution. Hence some of the flowers would become attractive in colour, scent, and honey, and produce in consequence less seed and more pollen. Most flowers, though capable of being crossed, are self-fertilised, while the insects that visit them carry off their pollen to fertilise any other flowers that may still chance to be unfertilised ; and where the anthers and stigma do not ripen at the same time, the plant has all the advantage of division of labour which unisexual flowers have. In these latter, again,

[1] Vines, *Physiology of Plants*, p. 608.

when nourishment is abundant, or if the accustomed fertilisation by insects is impossible on account of the absence of suitable insects, the suppressed pistils or anthers will often redevelop, and the plant will again become hermaphrodite. Many, again, have, besides the open flowers available for crossing, closed flowers which are always self-fertilised, so as to be secure against any mischance in cross-fertilisation. Thus Mr. Godron observed, near Nancy, that Primula grandiflora was fertilised with the pollen of Primula officinalis by means of bees, and a hybrid formed; but the reverse case never occurred, because the former flowers earlier than the latter. In another locality the reverse was the case, because here Primula officinalis came into flower before the other.[1] Mr. Evans observed in Natal that a plant, probably belonging to the sub-order Coffeæ, has flowers so arranged that to get at the honey ants cover themselves with pollen, and so effect cross-fertilisation should any flower chance to be unself-fertilised. The latter cases, however, must be few, because the anthers dehisce and cover the stigma with pollen before the bud opens.[2] Cleistogamous flowers fulfil the same object in a different way. These are probably derived from open flowers and secure the production of seed even in the absence of insects, or in the case of adverse circumstances injuring the open flowers.[3] Possibly even those flowers which habitually cross now were at first usually self-fertilised by insects, the movements of these creatures saving the plant the cost of making movements of its own, securing almost the certainty of fertilisation as compared with wind fertilisation, besides now and again securing the fertilisation of another flower. Mr. Meehan in various papers has long insisted upon the value of insects to plants in this respect, and many instances could be cited. Even in flowers where cross-fertilisation is necessary, the different flowers on the same spike are usually fertilised by pollen from each other. When cross-fertilisation becomes common, variation, as Professor Weismann shows, becomes

[1] Godron, *Rev. des Sc. Nat.* Cited in *Nature*, xiv. 37.

[2] *Nature*, xiii. 427.

[3] Mr. Bennett calls this *degradation*; is it not rather *adaptation*? (*Linn. Soc.* Cited *ibid.* xix. 67.)

possible, and the tendency to cross-fertilisation will be inherited, since there is no reason why it should not be where fertilisation is so certain.[1] We then very frequently see the entire suppression of one sex in order that the plant may devote its energies to the production of the other, but when circumstances become exceptionally favourable, or the methods of crossing fail, the suppressed sex may be again revived.

Should a plant exhaust itself in the production of anthers it will not develop the pistil at all. Or, the plant may from change of circumstances have its constitution so upset that it will be unable to produce more than one sex, or become irregular in the production of the sexes. We see this change particularly common when the plant is obliged to produce great quantities of pollen to neutralise the waste of its distribution by the wind. 'The most successful cultivators in Ohio,' says Mr. Darwin, 'plant for every seven rows of "pistillata," or female plants, one row of hermaphrodites, which afford pollen for both kinds; but the hermaphrodites, owing to their expenditure in the production of pollen, bear less fruit than the female plants.'[2] Now, such an hermaphrodite is apt to produce male plants in the course of generations, for the self-fertilised seeds are few in proportion to the others. We see in many plants abortive anthers inherited, just as the stump of a tail in tailless breeds of animals, certain useless muscles in man, or vestige of an ear, is inherited. Kölreuter found that by crossing male flowers that possessed the rudiment of a pistil with an hermaphrodite species, the offspring possessed a much larger and more developed pistil, which shows that these rudiments are really the same as the perfect organ.[3]

But how can crosses, when both sexes are produced at the

[1] Mr. G. H. Darwin, in a review on this work (*Academy* for August 28, 1875, p. 227): 'Were Mr. Huth's argument sound, we might expect to find at least some few elaborate plans in nature to secure perpetual self-fertilisation.' I hope in the present edition I have made my argument sufficiently clear, and that the reader will understand it to be that inability to cross (not *be* crossed) is a disadvantage from the lowest to the highest forms of life. Nevertheless, since reproduction of the individual is the first consideration, and a cross is only a contingent advantage, we find many cases even among phanærogams where self-fertilisation is perpetually secured by methods analogous to those which in other plants secure crosses. Some instances are given in the following pages.

[2] Darwin, *The Variation*, etc. 1875, i. 375.

[3] Darwin, *ibid.* ii. 306; *Origin of Species*, p. 451.

same time in the same flower, be an economy? Most of the orchids, as Mr. Darwin points out, have beautiful contrivances for crossing, while they are totally unable to fertilise themselves, and their pollen is sometimes barren, and sometimes even injurious when applied to their own stigma. 'Considering how precious the pollen of orchids evidently is, and what care has been bestowed upon its organisation, and on the accessory parts; considering that the anther always stands close behind or above the stigma, self-fertilisation would have been an incomparably safer process than the transportal of the pollen from flower to flower. It is an astonishing fact that self-fertilisation should not have been an habitual occurrence. It apparently demonstrates to us that there must be something injurious in the process. Nature thus tells us, in the most emphatic manner, that she abhors perpetual self-fertilisation.'[1] The reason that these orchids habitually cross by means of insects cannot be that there is any saving of physiological power, for there is probably a greater expenditure in affixing the anthers to the proboscis of a moth than would be necessary in contracting the anther on to the stigma. Neither can it be due to any saving in generative power, since both sexes are produced at the same time, and yet they do not fertilise each other on the same flower. It seems to me to be rather a redundancy of fertility superadded to unisex, just as parthenogenesis seems to be a later stage than dual sex. If orchids were originally hermaphrodites, fertilising themselves as well as their neighbours, and if from any cause, such as poorness of soil, greater expenditure on reproduction or some other cause, certain among them became unisexual, producing only undeveloped pistils or anthers, might they not resume their double sex under more favourable circumstances, and yet from long disuse be unable to fertilise themselves? If in their unisexual state the females had been fertilised by the agency of insects, would not the apparatus for this means of propagation in all probability still continue? for what cause would it have to change? It seems to me that the way in which the pollen is distributed is particularly safe and econo-

[1] Darwin, *The Fertilisation of Orchids*, p. 359.

mical compared with the broadcast distribution by the wind, as occurs in other plants, or the scattering of it all over the flower by the movements of an insect. In the orchis the pollen is mathematically applied to the stigma, and little or nothing is ever lost ; perhaps, indeed, it was the perfection of this plan which proved so great a saving in pollen that the plant was induced to develop again its dormant sex. To me it is far more inexplicable that pollen should be wasted as it is in the *coniferæ*, grasses, and other plants. The only explanation of this waste seems to be that these organisms, as they are below the orchids in the vegetable world, have not yet attained to their perfection of economy.

That the necessity the greater number of orchids are under of crossing is of no deep significance, but the result of adaptations caused by the slight advantages already alluded to, and made necessary merely by habit, is clearly shown by their ready reversion to self-fertilising habits—probably in consequence of the absence of the necessary insects. In our own country there is the Bee Ophrys, constructed with all the beautiful arrangements for cross-fertilisation common to its brethren, and undoubtedly used for that purpose by its ancestors ; but now the anthers have become pendulous, so that the pollen is shaken on to the stigma by every breath of wind.[1] 'Too often,' says Mr. Forbes, 'the interesting cases of flowers observed to be cross-fertilised by insects have been recorded, while those of flowers otherwise fertilised have not been mentioned, so that the law of cross-fertilisation in orchids has been in danger of being unduly magnified from the absence of evidence on the other side.'[2] Among the abundance of orchids which he had under his observation, only about 20 per cent. of the florets set capsules, although evidently fitted for cross-fertilisation by their colour and scent. In Portugal, again, he noted how many orchids remained unfertilised.[3] All this shows the danger of high specialisation, and how necessary it frequently is for plants fitted to be fertilised

[1] Darwin, *Contrivances of Orchids*, pp. 63–65.
[2] Forbes, *A Naturalist's Wanderings*, etc. pp. 96, 97.
[3] *Ibid.* p. 83–85 ; and *Nature*, xvi. 102.

by insects to have the power of readapting themselves to self-fertilisation. In this connection he noted that coffee, when not fertilised by bees, produces cleistogamous flowers in a second crop.[1] In addition to the self-fertilising orchids noted by Darwin, namely, *Ophrys apifera*, *Peristylis viridis*, *Cephalanthera grandiflora*, and *Dendrobium chrysanthum*, of which, he says, only the third one is *always* self-fertilised ; Mr. Forbes also notes several others: *Phajus Blumei*, although it is coloured and has a landing-stage and ridges to point the way to a nectary which is now generally empty, can only be self-fertilised, with possibly some very rare exceptions. Other species of *Phajus* are fertilised in the same way. *Spathoglottis plicata* is often fertilised before the flowers open, but always self-fertilised. *Arundina speciosa*, in the same way, though provided with colour and nectar-directing ridges, is usually self-fertilised before it opens. When, as is the case sometimes, the rostellum forms a flat floor to the anther, after the more usual form of orchids, the flower remains unfertilised ; and, even were an insect to lift the anther case, few flowers would be found to receive the pollen. *Eria albido-tomentosa* is self-fertilised in the bud; and there is a *chrysoglossum* that is cleistogamous though marked inside with orange and purple. He also mentions several others.[2]

Instances might be multiplied almost indefinitely of the gradation according to circumstances of the means of fertilisation. They all point to the same general fundamental need of securing the utmost certainty of reproduction of the individual, together with, when possible, the means of fertilising others. The small comparative value of the latter is shown by the carelessness of Nature to ensure its continuance even where it has no doubt existed ; a carelessness we see culminating perhaps in the flower of the grape, which consists of a group of stamens closely surrounding the pistil, and the whole covered up with a green cap, which is not dropped until the anthers have lost their vitality.[3]

I would draw particular attention to the fundamental difference between the ordinarily received theory that crosses

[1] Forbes, *ut sup.* pp. 75, 76. [2] *Ibid.* pp. 83, 85 96. [3] *Nature*, xxi. 468.

are usual because they are necessary to the well-being of the progeny of the organism crossed, and the theory that crosses are common because they are beneficial to the race of the organism that crosses. The latter theory denies that crossing is of the essence of reproduction, or is anything but an incidental process, the reason for which has been already given. At the same time it does not deny the occasional benefit of crosses to the progeny of the organism crossed ; it merely denies its universality, or that it was caused by any such benefits, or that it is anything more than the incident consequence of crosses, which itself was incidentally originated for a totally different reason. I cannot reconcile the theories of the late Mr. Darwin, as to ill-effects from in-breeding, or beneficial effects from crosses, with the facts. 'It appears probable,' he says, 'that the difference in the affinities of the sexual elements of distinct species, on which their mutual incapacity for breeding together depends, is caused by their having been habituated for a very long period each to its own conditions, and to the sexual elements having thus acquired firmly fixed affinities.' [1] Yet he says elsewhere: 'The advantages of cross-fertilisation * * * follow from * * * such individuals having been subjected during previous generations to different conditions, or to their having varied in a manner commonly called spontaneous, so that in either case their sexual elements have been in some degree differentiated. And, secondly, that the injury from self-fertilisation follows from the want of such differentiation.' [2] I fail to see how this explanation explains anything. On Dr. Weismann's theory we can understand how reproductive plasma may fail to develop in conjunction with reproductive plasma of a different species, either from the development of one opposing the development of the other, or insufficiently supplementing it, or even from difficulties of nutrition or other circumstances ; while the superiority in some ways of some crosses can also be understood on the assumption that if reproductive plasma from two individuals, each bearing somewhat different inherited characters, is combined, those characters will develop from each which are most suitable to the

[1] Darwin, *Cross- and Self-fertilisation*, p. 468. [2] *Ibid.* p. 443.

environment ; for the reason that such characters have been rather strengthened than otherwise during the previous life of the parents, and are therefore the strongest and most likely to develop. When, on the other hand, plasma from two individuals kept under the same conditions, or plasma from an hermaphrodite individual, is combined, such selective power is denied the offspring in its development. Hence in some cases we see that it is possible for long-continued in-breeding to be carried on, because the surroundings are unchanged, and the capabilities of the parent are sufficient for the offspring. But in most cases this is not sufficient. Every organism must bear heat and cold, fat and thin soils, good and bad nourishment, and other variations of circumstances. To be too well adapted to the surroundings of one period is to be too ill-adapted to the surroundings of another period, and hence the value of the power of variation by means of reciprocal fertilisation. We have also some rough inkling of the reason why a cross between two individuals of an entirely different stock will produce great variability, and very frequently reversion to the common parent stock; and that in many organisms larger and more luxuriantly growing individuals are produced, which generally, though not always if circumstances are favourable, are sterile as compared with the parent, and sometimes absolutely sterile. The reproductive organs, Mr. Darwin shows, are the first to be injuriously affected by changed conditions ;[1] when, for instance, animals are confined or tamed, or when plants are cultivated. In the same way a hybrid partakes of only half the nature and constitution of its mother : it may be exposed to conditions in some degree unsuitable, and consequently be liable to perish at an early period, or the reproductive system, independently of health, is affected by sterility in a very similar manner.[2]

We should anticipate that those plants which were accustomed to cross would do better when they followed their nature than when they were self-fertilised, even if we knew nothing as to the several benefits of crosses in enabling nature,

[1] Darwin, *The Variation*, etc. 1875, ii. 130 *et seq.*
[2] Darwin, *Origin of Species*, pp. 264, 265.

as it were, to select from the constitution of two parent individuals the most advantageous construction for the offspring. It is remarkable, therefore, how little advantage crosses are shown to have over self-fertilisation in some long continued and carefully conducted experiments undertaken by Mr. Darwin.[1] Certainly until the plant called 'Hero' appeared all the crossed plants were taller than their adversaries; but there are some points which make even this result doubtful as an indication. His system was to measure all the competing plants as soon as the first one had reached to the top of the pole;[2] but he noticed in some cases that the in-bred seeds germinated before the crossed, and these 'were of course rejected.'[3] We have here, therefore, two possible sources of error, to wit: (1) Supposing the in-bred seeds were likely on the average to germinate before the cross-bred, they would also have got to the top of the pole before the others; and (2) we have no evidence but what, if allowed, the in-bred plants would have grown as tall as the others ultimately, even though the early germinating ones were rejected. The plant called 'Hero,' the sixth generation of in-bred convolvuli, produced seeds by self-fertilisation, which grew up taller than any other plants of the same self-fertilised generation, or any other plants of the corresponding crossed generation. In the eighth gene ration, the grandchildren of 'Hero,' the self-fertilised plants were taller than some that had been intercrossed among each other, the most in-bred being the tallest. Nor did the progeny of 'Hero' benefit by a cross with a distinct stock.[4]

I have tabulated his results as follows:—

Number of Generation	Number of Seed Produced per Capsule		Number of Generation	Number of Seed Produced per Capsule	
	Crossed	Self-fertilised		Crossed	Self-fertilised
1	5·23	4·85	6	Unhealthy	Unhealthy
2	—	—	7	,,	,,
3	4·73	4·43	8	—	few
4	4·75	4·47	9	—	—
5	4·46	4·77	10	—	—

[1] Darwin, *The Effects of Cross and Self-fertilisation in the Vegetable Kingdom.*
[2] *Ibid.* p. 54. [3] *Ibid.* pp. 32, 38, 75. [4] *Ibid.* pp. 48–50.

Number of Generation	Average of Five Tallest Plants in Inches.		Average of all in each Table In-and-in Bred to the Crossed as 100	Average Height of the Self-fertilised in Inches
	Crossed	Self-fertilised		
1	439	337	76	67·4
2	427·5	357	79	71·4
3	392·5	287	68	57·4
4	382·5	325	86	65·0
5	426·25	345	75	69·0
6	446	329	72	65·8
7	429·75	382·25	81	76·45
8	620·75	541	85	108·2
9	452·62	393·87	79	78·75
10	468·5	252	54	50·4

From which it will be seen that self-fertilisation did not produce degeneration.

Mimulus luteus, another plant experimented on, though adapted for cross-fertilisation, will also fertilise itself. In the fourth generation a taller variety appeared both in the self-fertilised and in the crossed plants ; but in the fifth generation it became clear that this plant does best when self-fertilised. A cross of the sixth generation of in-bred plants proved inferior to the inter-crossed plants of the same generation ; but when the experiment was again tried in the eighth generation the crossed plants were decidedly superior.[1] Possibly this difference may have been due to the fact that the plants were raised from spontaneously fertilised seeds [2] insufficiently pollenised ; and we must also note that the fertilised seeds which germinated before the others were rejected.[3] Tabulating the results as before, we get the following :—

Generation	Average Height of Crossed	Average Height of Self-fertilised	Compared as 100 for Crossed to	Weight of Capsules Compared as 100 for Crossed to		Conditions
				Crossed	Self-fertilised	
1	7·62	5·87	77	—	—	Unfavourable
2	8·0	4·0	50	greater	less	,,
3	12 and 7·5	8 and 5·5	69	100 to 65		,,
4	8·5 and 6·5	5 and 7	80	100 to 40		,,
5	7, 4·5, 5·5	8, 7, 6·5	126	better	worse	,,
6	shorter	taller	—	100 to 147		,,
7	11·43	15·64	137	—	—	good
7*	—	10·96	—	—	—	good & bad
8	—	10·44	—	—	—	,,

[1] Darwin, *ut sup.* pp. 64-74. [2] *Ibid.* p. 74. [3] *Ibid.* p. 75.

in which we see no deterioration from in-and-in breeding. The difference in the results of in-and-in breeding in the Convolvulus, Mimulus luteus, and Foxglove is very much as their natural habits of crossing; little in the first, and more in the two last.

So, again, in Iberis umbellata the self-fertilised seeds grew five to six inches taller than the crossed, or supposed crossed seeds (since it was not certain that they were crossed); while the reverse was the case when the same lots were sown in earth freed from organic matter.[1] In Eschscholtzia californica the in-bred plants were superior in everything but productiveness.[2] In Mignonette the self-fertilised seed produced the tallest plants when grown out of doors.[3] In the Violet the self-fertilised plants were very inferior to the crossed;[4] but we must observe that this plant is cleistogene, and seed should have been taken from the self-fertilised cleistogene flowers, and not from the open flowers, which in their natural state cannot fertilise themselves. The reader must remember, however, that these advantages are really exceptional, while, as a rule, the crossed plants had the advantage in the struggle for life. Nevertheless plants unaccustomed to in-and-in breeding did not degenerate when bred in-and-in for ten generations. I think then that we may fairly conclude that the sexual elements are identical; that occasional crosses are valuable to secure a small amount of variation and with it adaptability to varying circumstances; and that too frequent crosses, or crosses between distinct varieties, are usually harmful, producing an offspring of weedy growth, ill-balanced intellect, often as ill-adapted to its surroundings as the most ill-adapted of its parents, and frequently sterile.

[1] Darwin, *ut sup.* p. 103.
[2] *Ibid.* p. 109.
[3] *Ibid.* p. 119.
[4] *Ibid.* p. 125 *et seq.*

CONCLUSION.

WE have seen in the preceding pages that not one of the many reasons which have been advanced why marriage between near kin should be prohibited by the State can stand enquiry. We have seen that there is no natural horror of incest, and that many peoples have practised and habitually do practise it; while, on the other hand, we have seen that, whatever may be the reasons of certain prohibitions which exist, they are certainly not due to any conscious or unconscious experience of any evil results. We have seen that the statistics on which so much reliance has been placed, as a proof of the harmfulness of consanguineous marriage, are, when not absolutely false, miserably misleading and defective. And, finally, we have seen that the great argument of biologists that crosses must be beneficial, or there would not be two sexes, is by no means proved, and the presence of dual sex can be accounted for in another way.

On the other hand we have seen many cases of in-and-in breeding in isolated communities, and more especially among domestic animals, in which no evil effects have been observed; and I must here again call attention to the very superior value of this argument in comparison with the converse one, that in many cases evil effects have been observed in the offspring, since in the latter we have no proof that these effects are not the result of morbid inheritance. We have seen also the failure of arguments against marriages between near kin, and cannot but see in that failure a further series of arguments in their favour. It remains for our consideration whether we should rest satisfied with this result, and whether

it is advisable that the laws concerning the prohibited degrees should be altered in any way.

The first question scarcely needs consideration, for no question ever really remains stationary. Yet at the same time it would be very desirable that a little more study should be expended before such positive assertions on either side were made, and that those who believe in the baneful effects of consanguineous marriages would rather devote their energies to the only way the practical question can be settled, that is, by including the question of the blood relationship of married couples in the census. Objections have been made to this upon various grounds. When Sir John Lubbock attempted to have the question inserted in 1871, Mr. Hardy objected to 'gratify the curiosity of speculative philosophers'; Mr. Locke thought it 'a piece of the grossest cruelty'; Mr. Collins thought a return of those who had married their deceased wives' sisters would be a more valuable and a practical question, whereas this was 'purely inquisitorial; the only object could be to stigmatise certain marriages to which he personally objected, but upon which he did not think Parliament ought to cast a slur'; Mr. Melly thought the inquiry useless without further enquiries as to the mental condition of the children; Dr. Ball thought the public would be none the wiser for the knowledge of the number of consanguineous marriages existing.[1] In 1880 I endeavoured, by means of a letter to the 'Times,' again to raise the question.[2] In a leading article that paper objected that various people wished to have various questions inserted of little practical importance, and which would greatly increase the expense;[3] and a correspondent took the same view.[4]

Now, interesting as the census is, I venture to say that as at present conducted it is of next to no practical importance. The probabilities of life may be ascertained from the returns of the Registrar-General; the returns of the occupations of the people are only valuable as they illustrate the prosperity of the country, and may be practically determined by the

[1] The *Times*, for July 27, 1870.
[2] *Ibid.* July 20, 80 18.
[3] *Ibid.* July 23, 1880.
[4] *Ibid.*

returns of the Board of Trade. The returns of population are not of the slightest practical value at present, excepting when a Redistribution Bill is being discussed. When will the nation learn to make a real use of the census? Very many questions upon which theory is exhausted may be settled by one census for centuries, and need not be repeated. Parliament is asked to legislate on disestablishment, in utter ignorance as to the religion of the people; the same is the case as regards deceased wives' sisters, and many other questions. One additional and different question at every census would make all the difference between a useful and useless expenditure, and settle many questions of the practical importance to the health and happiness of the nation. But in another respect its value would be far greater and well-nigh incalculable. The thinkers throughout the world are continually and indefatigably groping in the dark for truths that will benefit mankind; their accumulations of facts grow, but much time, much misdirected energy, is wasted until an induction can be made, and the future direction of investigation determined. It is not too much to say that in all questions that directly affect mankind, such as disease, sanitation, morals, commerce, and what you will, time would be saved, harmful legislation avoided, and sound principles of progress determined by a question in the census, which must not be put, forsooth, lest 'speculative philosophers' be gratified!

As to the particular question before us, my readers will judge of the validity of the objections. How can a marriage be 'stigmatised' when no one concerned in the census knows the person who makes the returns? Jones of Birmingham may have married his first-cousin, and may or may not have some deaf-mute children. These facts will doubtless be well known to all his acquaintance; but will the clerks of the Registrar-General know or care to know Jones of Birmingham, or select his name from some hundred thousand similar returns to store up in their memory? Had our legislators objected to the cruelty of asking ladies no longer young their age, there might have been some force in the objection, for such facts are frequently supposed to be unknown to their

immediate acquaintance, and possibly the enumerator might be tempted to reveal the secret. Nothing would be easier than for the census commissioners to take the public into their confidence, and by a few figures demonstrate that their private affairs are not published, while at the same time pointing out the value of accurate returns ; or, by arrangements I believe already in force, allow the returns to be sealed and sent direct to London.

Since this work was first published a great change has come over public opinion as to the harmfulness of marriages between near kin. In 1870 we have Sir John Lubbock saying in Parliament 'he was glad that almost all who had spoken had expressed an opinion against these marriages';[1] no medical work touched on the question without stigmatising them as creative of disease ; and the public were beginning, in spite of their practical experience, to believe what they were taught. Now we have in the parliamentary return on deaf-mutes[2] the Americans saying, 'Consanguineous marriages, so generally considered a veritable cause of deaf-mutism, are regarded by our scientific authorities as entailing imperfections simply under the laws of heredity. Tendencies for good or for ill are intensified.'[3] And this opinion is the one now generally held by the medical world, as may be ascertained by reference to the medical papers.[4] This alteration of opinion is undoubtedly very largely due to the paper of Mr. G. H. Darwin on the subject,[5] which attained a wide circulation ; and I do not suppose that any proposition to restrict marriages between blood relations beyond the present degrees will ever again be seriously made.

It is of the greatest importance that the marriage law should be as little subject to change as possible, to the end that it may be certain in its operation, and not induce people by any foolish provisions either to break it or entirely do without it. Marriage should therefore be only prohibited in

[1] The *Times*, July 27, 1870.
[2] *Miscellaneous*, No. 1 (1886). [3] *Ibid.* p. 60.
[4] See, *e.g.*, the meeting of the British Medical Association at Brighton, 1886, the report of which I saw too late to incorporate in this work.
[5] 'Marriages between First-Cousins in England,' etc. *Journal of the Stat. Soc.* June 1875, xxxviii. 153-182.

those degrees which by general consent are considered incestuous; that is, in the direct ascending and descending line, between brother and sister, and uncle and niece; or those degrees which, as a rule, imply an unsuitable difference of age between the parties. It is true that uncle and niece are often at a suitable age for marriage, and brother and sister generally are; but in the one case an uncle has an undue advantage over other suitors, while as a rule he is proportionally too old, and if some uncles were permitted to marry their nieces all must be allowed to do so; in the other case it is probable that if brothers and sisters were allowed to marry, they would do so while yet too young, while as they generally do not desire it, and the chances of morbid inheritance are thereby greatly increased, since selection cannot be exercised, it is as well to forbid it. With cousins it is very different. A man may have fifty cousins and only one or two sisters; he is much more likely therefore to fall in love with a cousin; moreover, the chances of morbid inheritance are practically reduced to nothing, and the fact that these marriages do occur is sufficient to warn any Government that a prohibition would be useless.[1] On the other hand, it is for many reasons commendable to marry a relative, for here one can exercise some selection, since a man generally knows the state of health and the disposition of members of his own family. To prohibitions against the intermarriage of connections we must apply the same rule. Marriage between step-mothers and step-sons, or father and daughter-in-law, should

[1] I would refer any one who may be doubtful as to the inability of a Government to prevent marriage within certain degrees in which the people themselves see no harm to the *Report of the Royal Commission on Marriage Law of* 1848. It will be seen that, despite the laws and that amount of public opinion which upholds them, more than one per cent. of all marriages contracted in England is between widowers and their deceased wives' sisters; while the proportion of these marriages to all marriages of widowers is one in thirty-three. The proportion must therefore be enormously great compared with those cases where a widower's deceased wife has left an eligible unmarried sister. The recognition of these marriages has been forced upon the Governments of France, Denmark and all other Protestant States of the Continent. The Australians, Canadians, and practically all our colonies have squeezed a recognition of such marriages out of their reluctant mother-country. Even in England there is a powerful society organised in their favour; indeed in this country the feeling against them is entirely due to the statute of Henry VIII. created to gratify his own passions. For instances of immorality to which this prohibition has led in England, see p. 2, q. 8, p. 4, q. 27, p. 6, q. 46, p. 9, d., p. 12, b., p. 14, b., p. 16, q. 175, of the *Report of* 1848.

be prohibited, since they must usually be of an unsuitable age for marriage, and undue influence is to be feared. For the same reason, marriage between a guardian and his ward, so long as this relationship exists, should also be prohibited ; but brothers and sisters-in-law should be allowed to marry, as they are usually of suitable age, and more nearly represent the deceased party than any other person could.

The conclusions we arrive at, then, after due study of the foregoing matter, are these :—

I. That any deterioration through the marriage of near kin *per se*, even if there be such a thing in the lower animals, is impossible in man, owing to the slow propagation of the species.

II. That any deterioration through the chance accumulation of an idiosyncrasy, though more likely to occur in families where the marriages of blood relations was habitual, practically does not occur oftener than in other marriages, or it would be more easily demonstrated.

III. That, seeing the doubt, to say the least of it, which exists concerning the effects for harm of marriages between near kin, and on the other hand the certainty that whenever and wherever marriage is impeded a direct and proportionate impulse is given to the practice of immorality, it is advisable not to extend the prohibitions against marriage beyond the third collateral degree, and to permit all marriages of affinity excepting those in the direct ascending or descending line.

APPENDIX.

I MAY, perhaps, be blamed, for giving all the following cases in full, worthless as they are, from a statistical point of view, but they are nevertheless useful to show on what foundation the fear of consanguineous marriage rests.

It is a mystery to me, indeed, why they have been collected at all since most impartial authors agree that they are always, though not purposely, mere selected cases. 'Memory searches for instances of unions of kinship,' says Dr. Mitchell, 'from the history of which the answer is to be framed. Now, it is certain that all those which have been marked by misfortune will be first called up, while many of those which have exhibited no evil effect or no peculiarity of any sort will be passed over or forgotten. The attention, in all likelihood, has been frequently drawn to the first, while nothing may have occurred in the progress of the last to keep alive the recollection of relationship in the union. I need scarcely say that facts collected in this manner are almost sure to lead to inferences beyond the truth, yet it is from such data that conclusions on this subject have frequently, if not usually, been drawn.'[1] M. Mantegazza also says: 'Questi fatti * * * non sono la fotografia della società umana in una vasta regione di paese: ma son fatti scelti quà e là secondo l' opportunità di molti osservatori sparsi e divisi. È naturale poi che in ogni paese si sia raccolto un numero maggiore di fatti contrarj alle unioni fra parenti; perchè erano i primi a cadere sotto gli occhi, a fermar quasi l' attenzione dell' osservatore. I più fra i medici e legislatori sono persuasi che questi matrimonj sono nocivi alla prole; per cui quando hanno sotto gli occhi figli robusti e senza mende, non si curano di domandare se siano il frutto di due cugini o di uno zio o di una nipote.'[2]

The collection of cases of consanguineous marriage, where the results as regards the offspring are good, is on the other hand very valuable; since if it is true that the intermarriage of near kin will of itself, without any previous taint or hereditary tendency whatever, produce offspring who suffer from some disease of the nervous system or prove barren, then why do not all marriages of this sort produce these effects? The cause

[1] Mitchell, *Mem. read before the Anthropological Society of London*, 1866, ii. 402, 403.

[2] Mantegazza, *Studj sui Matrim. Cons.* pp. 27, 28.

is there—a very powerful cause if we are to believe these writers—but it only acts in a very uncertain way ; indeed, so uncertain is it that we have good reason totally to deny its action in any case. If, forsooth, we are to believe, with Morris, that over 64 per cent. of the children of these marriages are affected in some harmful way,[1] how could it fail to manifest itself in a way that could not be ignored even by the greatest advocate of consanguineous marriage? If, again, we are told to believe that every consanguineous marriage must lead in time to disastrous results, how much more convincing to the contrary is a set of observations like that of M. Seguin or M. Bourgeois, where after continued consanguineous marriages in the family no harmful effect is there, than isolated cases of which nothing is known either of family idiosyncrasies or family habits !

Though I must confess strongly tempted, I have made no remarks on the following cases, with the exception that where some explanation has been necessary I have added it in an occasional footnote. Anyone, bearing in mind the manifold causes of the diseases said to result from consanguineous marriage, will readily detect the weak points in these observations for himself, and will at once see that these cases do not and cannot represent the whole population, any more than a set of cases taken from a hospital would do so ; or, rather, they are even less faithful than these would be, since the latter, taken in sufficient quantity, might afford some data for a certain class of the population, while the former, since they are selected cases, and by no means, even with the best intention, impartially chosen, would not be reliable for any class of the population, however great the quantity.

1. Two first-cousins, perfectly healthy, married, and, as far as M. Balley is aware, had only two children, a boy and a girl. The boy was an albino, and the intelligence of the girl was but poorly developed.

2. A chemist of Bourbonne-les-Bains, who was the son of first-cousins, married a German lady. Both were healthy, and they had four children. Of these the eldest was malformed but intelligent ; the second, a deaf mute ; the third, well-formed and healthy ; the fourth, a girl, was imbecile.

3. A captain at Rome married his first-cousin. They had several still-born children, besides some who lived a short time, and were malformed ; and one still living, who, besides being malformed, is rickety, and has been almost from his birth upwards affected with chorea.

4. A doctor married his first-cousin, and had two children, seemingly of poor intelligence.[2]

5. Two first-cousins married, and had eight children ; but every alternate child was a deaf-mute.[3]

[1] Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 511.

[2] Cases Nos. 1 to 4, reported by Balley, *Gaz. Med. de Paris*, 1863, xviii. 111 and *Comptes Rendus*, 1863, lvi. 135, 136.

[3] Case No. 5, reported by Brochard, *Comptes Rendus*, 1862, lv. 43, 44.

6. The three daughters of a lady married the three sons of her sister. Of these one had a boy and two girls, who were all perfectly healthy.

7. The second had three boys and two girls; the eldest boy had a slight impediment in his speech; the second was a deaf-mute, and married a person not related to him, by whom he had two children who could speak; the third boy was also deaf-mute, and remained unmarried; the two girls were perfectly healthy, but one of them stammered slightly on certain letters.

8. The third marriage produced two boys and one girl still living, and a malformed individual who died. Both boys were congenital deaf-mutes. The elder married a person not related to him, and has a child who can speak. The girl first began to speak when aged six years.[1]

9. A marriage between first-cousins, which produced a puny boy, who was an albino, and died in his thirteenth year.[2]

10. In a family of six children, two of them boys, two girls and a boy married their first-cousins, and the remaining three married strangers. The first consanguineous marriage produced eleven children, ten of whom died of hydrocephalus in their babyhood, and one died of the same disease in his fourteenth year.

11. The second marriage produced eight children, of whom six died young, and the remaining two are delicate.

12. The third marriage produced five children. Of these one died on the fifteenth day of its life; one lingered three years; and one died of meningitis, aged twelve years. The three non-consanguineous marriages produced six, seven, and six children respectively. Of these two of one family died young, and one of another.

13. A still-born infant was born after a protracted labour of ten hours. It was anencephalous, club-footed, hare-lipped, and had a fleshy appendage fifteen centimètres long on the right shoulder, only four toes on the left foot, and only three on the right. The parents were first-cousins; the mother aged thirty-three, of nervous temperament, and subject to hysteria, but otherwise of good constitution; the husband was aged thirty-nine, and had a good constitution.

14. A child of first-cousins had an extra toe on each foot. His father was a distinguished chemist.

15. An illegitimate child of second-cousins, born in the hospital of St. Charité, at Lyons, was destitute of a cranial arch, and the brain was but feebly developed.

16. A boy, twelve years of age, had at the crown of his head a patch of black and white hair. His parents were first-cousins.

17. In a village in the district of Yverdon two brothers married two sisters, their first-cousins. They were all healthy, well-to-do peasants,

[1] Cases Nos. 6 to 8 reported by Q. de Ranse, *Comptes Rendus*, 1862, lv. 405, 406.

[2] Case No. 9 reported by Aubé, who asserts that albinoism as a result of consanguineous marriage is very common. He accordingly instances three albinoes, of which two were brothers, and *their father was unknown*; the third is Case No. 9; see Aubé, 'Note sur les Inconvénients,' etc. in the *Bullet. de la Soc. Imp. Zoologique*, No. 11, Nov. 1857, iv. 511.

without any hereditary tendency to disease of any kind. The one had two children by his marriage, both albinoes, and one of which died young.

18. The other had five children, and all of them albinoes. Three of these died, one from a fall, and the other two from some disease not reported by the 'Écho Médical Suisse,' whence M. Devay extracts this case. The husband in this last case lost his wife and married again a person not related to him, by whom he had four healthy children.

19. A boy of twelve years of age, who was an idiot, was descended from a noble family in which consanguineous marriages were customary. He had an elder brother, who was perfectly healthy and successful in his studies, but subject to a most violent temper. Epilepsy had appeared occasionally in the family.

20. A woman married her uncle, and has as yet only two children. Both of these are deaf-mutes. The parents are healthy, and there is no hereditary tendency to disease in the family.

21. In a family of fourteen children, the parents of whom were related, all died early excepting one. Those who died young were attacked by convulsions, the others by consumption.[1]

22. Two first-cousins, of good constitution, married, and had eight children. The first at eighteen months of age got an acute fever attended with delirium, but no convulsions; on convalescence his lower members atrophied, he became a cripple, and besides lost his hearing, though he retained his intelligence up to the date of his death, aged fifty-one. The second died of meningitis, aged five years. The third is very intelligent and healthy, but has become completely deaf. The fourth, a congenital deaf-mute, is very intelligent. The fifth is healthy and intelligent, but his hearing is slightly defective. The sixth, a girl, was congenitally deaf, though intelligent; at the age of thirty she altered for the worse, and became subject to hallucinations. The seventh was perfectly healthy at birth, but afterwards became idiotic. The eighth was a congenital deaf-mute, and became a professor in an asylum for the deaf and dumb.[2]

23. An uncle married his niece, and had eight children. Of these seven died before they had reached their fourth year from convulsions, hydrocephalus, etc. The eighth is now thirty-three years old, delicate, and affected with psoriasis diffusa, almost congenitally. Both parents were healthy.[3]

24. A marriage between first-cousins, which produced ten children, of whom five died young. The three remaining girls were puny and bent. One of the two boys is healthy, but slightly bent; the other was very small, and got articular rheumatism at twelve years of age, from which he is rarely free. The father and mother were both healthy, and the father's two brothers who married persons not related to them have healthy children.

25. A marriage between first-cousins, which produced seven children,

[1] Cases Nos. 10–21 reported by Devay, *Du Danger*, etc. pp. 99–103, 111, 112, 119, 120, 139, 143, 144.

[2] Case No. 22 reported by Forestier; see Devay, *ut sup.* pp. 120, 121.

[3] Case No. 23 reported by Potton; see Devay, *ut sup.* p. 145.

of which one died young. The eldest, a boy, is healthy, but has a scrofulous tendency. The younger brother, now aged forty, was scrofulous, and had when aged six years a white tumour, first on his left elbow, and then on his right, which took a long time healing, and came again on his knee, so that at last his leg had to be amputated. The youngest is vigorous, but articulates badly and is malformed. The eldest girl was small and malformed, and menstruation ceased at the age of twenty-seven. She is now forty-one. The second was always delicate. The third, aged thirty-five, has now been married several years, and has no children. The mother of these children has two sisters, who married out of the family, and both have healthy children.[1]

26. A boy, whose parents were the children of two brothers, had his toes malformed and undivided. He has a sister who is perfectly well formed.

27. A girl, the only daughter of an uncle and his niece, was epileptic. There was no family tendency to this disease.[2]

28. Two relatives married and had six children, all affected with scrofula or rickets. One who was rather better than the rest was not suckled by the mother, but had five wet-nurses. Both parents were healthy.[3]

29. A marriage between uncle and niece, which produced only one child, a puny girl, who while yet in the cradle had croup, convulsions, etc. She lingered several years, though troubled with excessive nervousness, and finally died from general hæmorrhage from the skin and mucous membranes. Both parents were healthy.[4]

30. In a family where the parents were first-cousins, and where for generations consanguineous marriages have been the rule, were born three girls, all congenital deaf-mutes, squat in figure, puny, and scrofulous. One is epileptic. They have a brother who hears and speaks.

31. A marriage between second-cousins, which produced two children, a boy and a girl, the latter a congenital deaf-mute. The parents were healthy, one was aged thirty-three, the mother twenty-six. Their habitation was healthy, but they had three nieces, who were also deaf-mutes.

32. Two children, boy and girl, congenital deaf-mutes, were born from parents who were first-cousins. The boy died at the age of four. The mother's mother had died of tuberculosis.

33. Three children were born to parents distantly related, but perfectly healthy. One, a boy, hears and speaks; but the other two, who are girls, are congenital deaf-mutes.

34. A marriage between uncle and niece, which produced but one child, a girl. At the age of eighteen months, during dentition, she was taken with convulsions and became perfectly deaf. The father

[1] Cases Nos. 24, 25 reported by Viennois; see Devay, *Du Danger*, etc. pp. 237, 238.

[2] Cases Nos. 26, 27 reported by Bondet; see Devay, *ut sup.* pp. 101, 146.

[3] Case No. 28 reported by Teissier; see Devay, *ut sup.* p. 145.

[4] Case No. 29 reported by Doyon; see Devay, *ut sup.* p. 146.

was slightly deaf. He was, besides, twenty-one years older than her mother.

35. A marriage between first-cousins, which produced seven children, three girls and four boys. Two girls are deaf-mutes ; the rest of the children are all dead. The father is two years younger than his wife, and their dwelling is damp. One of the girls recently died of phthisis.

36. A marriage between first-cousins, which produced four children, two boys and two girls. One girl is a congenital deaf-mute, subject to congestion of the cervical ganglia, and suffers from chronic conjunctivitis. Her sister is too young to determine whether she hears. Her brothers both speak and hear. The parents are healthy, but live in a damp house.

37. Two girls, cousins of case No. 31, the daughters of first-cousins, are congenital deaf-mutes. Their habitation is perfectly healthy. Two cousins of the father married their own cousins, and have deaf-mutes in the family. Deaf-mutism was previously unknown in the family.

38. Two first-cousins, aged respectively thirty-four and twenty-eight, had two sons, of whom one was a congenital deaf-mute and the other could hear and speak. Their dwelling was healthy.

39. A marriage between first-cousins, which produced eight children, seven boys and one girl. Four of the boys were congenital deaf-mutes. The father was fourteen years older than his wife ; and when the eldest deaf-mute was born, the parents were aged respectively forty and twenty-six. Deaf-mutism was previously unknown in the family, and their dwelling was perfectly healthy.

40. A marriage between second-cousins, which produced two children, boys, of which one was a congenital deaf-mute. The father was aged thirty-six when the mother was twenty-two, but both were perfectly healthy.

41. A marriage between second-cousins, which produced three children, all boys and congenital deaf-mutes. The parents were healthy, their dwelling dry, and deaf-mutism was previously unknown in the family.

42. A marriage between second-cousins, which produced two children, one of whom was a congenital deaf-mute. The father was aged thirty-five at the time of enquiry, and the mother thirty-four. Their dwelling was healthy.

43. A marriage between first-cousins, which produced two children a boy and girl. They were both deaf-mutes. The mother was younger than her husband.

44. A marriage between first-cousins, which produced two children, a boy and girl, both congenital deaf-mutes. The boy was also lame from birth, puny, and of bad health. The girl died at the age of four years. Their parents were well-to-do people.

45. A marriage between first-cousins, which produced four children, two boys and two girls. The boys were both of them congenital deaf-mutes. Their dwelling was healthy, and there was no hereditary tendency to deaf-mutism in the family.

46. A marriage between first-cousins, which produced five children. Of these three were deaf-mutes. There was no hereditary tendency to this disease, nor was the age of the parents disproportionate, nor was their dwelling unhealthy.

47. A marriage between third-cousins, which produced four children, three girls and one boy, all deaf-mutes. Their parents were healthy, and their grandparents were not deaf-mutes.

48. The Mayor of C—— (Dordogne) married the daughter of his first-cousin, and had by her a son and daughter, not only exempt from all disease, but endowed like their parents with the best health. The daughter when she was twenty married a person who was not related to her, and a few years older than herself, and gave birth to a congenital deaf-mute. They lived in a healthy place, and there was no deaf-mutism previously in her family, nor was it common where they lived.[1]

49. A healthy man married his first-cousin, by whom he had a daughter, who stammered, and is now aged twenty-three. She had a child which died of hydrocephalus at the age of three.

50. The same man married again, and again he married a first-cousin. Three children were born to this second marriage, of whom two died young from convulsions, and one is healthy.[2]

51. A marriage between first-cousins, which produced one epileptic child, now aged twenty-five. The parents at his birth were aged respectively thirty-five and thirty. There was no hereditary tendency to the disease in the family.

52. A marriage between first-cousins, which produced two children, a girl who was epileptic, and a boy who was scrofulous. The husband was two years his wife's senior, and there was no hereditary tendency in the family to these diseases.

53. A marriage between first-cousins, which produced four children, three of whom died young of convulsions, and one is healthy. The mother is now ill, but up to the time of the birth of these children, and till six years after the birth of the last, she was quite well.

54. A marriage between healthy first-cousins, which produced only one child, and that died young.

55. A marriage between persons not related, which produced two children, who died of typhoid fever between the ages of five and of twenty. On the death of their mother the man married again, this time his first-cousin. Two children were born to this marriage, both of them hunch-backed.

56. Two illegitimate children of first-cousins were born, the one with two extra little fingers and one extra big toe; the other with two extra fingers, both great-toes double, and one extra little toe. These children died at the respective ages of fifteen days and six weeks. The

[1] Cases Nos. 30–48 reported by Chazarain, *Du Mariage entre Cons.* etc. pp. 35–40, 43, 44.

[2] Cases Nos. 49, 50 reported by Chipault, *Études sur les Mar. Cons.* p. 41. They are given somewhat differently in the *Comptes Rendus*, 1863, lvi. 1001.

mother afterwards married a stranger, and had three well-formed children.[1]

57. A marriage between first-cousins, which produced two children, both deaf-mutes. There was nothing of the sort in the family before.[2]

58. Three children, whose parents were first-cousins, were deaf-mutes.

59. A Neapolitan, who married his niece, had four children by her, of whom one, a girl, was very eccentric; the second, a boy, was epileptic; the third, a boy, was very intelligent; the fourth, also a boy, was an idiot and epileptic. Both parents were healthy.[3]

60. A woman who remained barren during her marriage with her first-cousin had several children on her second marriage with a person not related to her.[4]

61. An intelligent officer married his niece. His first child was a boy, healthy in all respects. Three years after he had another boy, afflicted with hare-lip and cleft-palate, and who only lived a few weeks.[5]

62. A marriage between persons related in the second degree. Seven children were born, of which one with hare-lip died six days after birth, and the remaining six died before they had reached their third year.

63. It is to be presumed the husband in Case No. 62 married again for he had a son who married his first-cousin, and had three children, of which one had hare-lip and died young.

64. A son, one of the two remaining children from Case No. 63, married his second-cousin, and had five children. Of these four died young, and one of the four was a deaf-mute.

65. The remaining son, in Case No. 64, when aged thirty-three, married his first-cousin, who was aged twenty-one. They had four children, the eldest of whom, a girl, had a cleft-palate and hare-lip, and died when twenty-nine days old. The second, a boy, was well formed, and is now five years old. The third, a girl, is also well formed, and now aged three years. But the fourth, a girl, had a cleft-palate and hare-lip, and died when seventeen days old.[6]

66. A marriage between first-cousins, which produced three children. The eldest, a girl, is much bowed; the second was born blind; and the third was hunch-backed. The mother in this case was of remarkably good constitution, and her husband was a fine-looking man, aged twenty-seven at marriage.[7]

67. A marriage between uncle and niece, which produced two children The eldest, a boy, manifested from early youth a most evil disposition;

[1] Cases Nos. 51 to 56 reported by Chipault, *Études sur les Mar. Cons.* etc. pp. 43, 44, 47, 48.

[2] Case No. 57 reported by Duteval; see Chipault, *ut sup.* p. 34.

[3] Cases Nos. 58, 59 reported by Trousseau; see Chipault, *ut sup.* p. 43.

[4] Case No. 60 reported by Lisle; see Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 518.

[5] Case No. 61 reported by Potier-Duplessy; see Boudin, *ut sup.* pp. 515, 516.

[6] Cases Nos. 62 to 65, reported by Rizet; see Boudin, *Mem. de la Soc. d'Anthrop. de Paris*, 1863, i. p. 516.

[7] Case No. 66 reported by Robillard; see Boudin, *ut sup.* p. 521.

gave way to all sorts of debauchery as he grew up, and finally got a choleraic affection in Cochin China, of which he died on his return home at about the age of twenty-one years. The second child, a daughter, was microcephalic, but not an idiot, though of small intelligence. The father married at the age of forty-two, was intelligent but crotchety. The mother was also intelligent, but a little nervous and irritable.[1]

68. A child entered the institution for deaf-mutes at Paris, whose grandparents were first-cousins.

69. A marriage between third-cousins, from which two children were born. One is healthy, the other is monorchid.[2]

70. A marriage between uncle and niece; both were of lymphatic temperament, and she much younger than he. They have two daughters, now aged respectively fifteen and twenty-five; like their parents both lymphatic, but both rejoicing in perfect health.

71. A marriage between second-cousins, both healthy, produced one child, a healthy boy, and now aged thirty-five years.

72. The boy mentioned in Case No. 71 married, at the age of twenty-five, a cousin related to him in the sixth degree, and eleven years older than himself. Two boys were born to them, and both are perfectly healthy.

73. The brother of one parent in Case No. 71, and sister of the other, married, and had three perfectly healthy sons; and one daughter, who became delicate when about twenty years old. Both parents were healthy.

74. The daughter in Case No. 73, a few months after her twentieth year, married her second-cousin, who was to all appearance of poor constitution. They had a still-born child, and the mother died in childbirth consequent on the grief, anxiety, and fatigue she had gone through in nursing her parents, who were both carried off by cholera a few weeks before her confinement.

75. A marriage between first-cousins, which produced, up to the time of the report, two children, who are both still young and healthy.

76. A marriage between first-cousins, who have as yet one child, four years old, and perfectly healthy.

77. A marriage between cousins related in the sixth degree. The husband was unhealthy and died young, leaving a child of feeble constitution, but without any pronounced disease.

78. A marriage between cousins related in the fourth degree. The parents are perfectly healthy, and have a child scarcely two years old, and also perfectly healthy.

79. A marriage between first-cousins, not in good health. They have a puny child, now five years old. The husband became consumptive, and a second child died at the age of a few months, having been constantly ill.

[1] Case No. 67 reported by Peter; see Héliot's *Contribution à l'Étude de la Consang.* Paris, 1875, pp. 60, 61.

[2] Cases Nos. 68 and 69 reported by de la Charrière; see Héliot, *ut sup.* p. 65.

80. A marriage between cousins of the sixth degree. They have a son now aged thirteen years, and perfectly healthy.

81. A marriage between first-cousins of good constitutions. They have no children, but the wife's sister, also perfectly healthy, is likewise barren.

82. A marriage between cousins related in the sixth degree, in a family where carcinoma was hereditary. The wife died when she had nearly attained her thirtieth year, having given birth to four children, two of whom died young, and the remaining two are poorly. The father is healthy.

83. The sister of the husband in Case No. 82, and the brother of his wife, married, and had two children poor in health. One of these died at the age of ten years, and the mother died about the same time of a tuberculous disease.

84. A physician married his niece, and had two children, whose physical and intellectual powers enabled them to follow with distinction their father's profession. Both parents were healthy.

85. Another physician, age thirty-five, married his niece aged twenty, who was of lymphatic temperament. In the course of four years he had two children, aged at present respectively three and fifteen months. Both are healthy.

86. A third physician, in good health, married his first-cousin, who was of poor constitution. He has one child, now aged ten years, and in poor health.

87. A marriage between first-cousins, which produced two daughters, now aged respectively twenty-three and twenty-five years. They are not very healthy, but more so than their mother, who, however, is still living.

88. A marriage between cousins related in the sixth degree. Two children were born to them, now aged respectively twenty-one and twenty-three years. Although one of them at the age of three years had an attack of acute meningo-encephalitis, which destroyed his hearing, they are both very healthy.

89. A marriage between second-cousins, which produced three children. Of these one died at the age of forty-one of an acute disease. The other two are now aged respectively fifty-four and fifty-six, and are in excellent health. The parents died at the respective ages of seventy and ninety-two.

90. One of the children in Case No. 89 married his cousin in the fourth degree, and had seven children, now of ages ranging between thirteen and thirty years. They are all very healthy.

91. The son mentioned in Case No. 89, who died of an acute disease at the age of forty-one, had married his first-cousin, and had seven children. Of these four died of epidemic diseases, all under the age of eleven years; but the three others, whose ages range at present between twenty and twenty-eight, are all perfectly healthy.

92. One of the children in Case No. 91 married her first-cousin, who was one of the children mentioned in Case No. 90, and had within four years three children, all healthy. The eldest died of croup, aged eighteen months.[1]

[1] Cases Nos. 70 to 92 reported by Bourgeois, *Sur l'Influence*, etc. pp. 39-41.

93. A marriage between first-cousins, which produced three daughters, who all subsequently became the mothers of large families. All were perfectly healthy and well formed.

94. A nephew of the wife in Case No. 93 married his first-cousin, and had seven children, of which five are still living and in perfect health. Of the two who died one death was from croup, and the other child only lived eight days after birth.

95. One of the children in Case No. 94 married his first-cousin, and has two children, whose command of voice is only too manifest.

96. M. G——, Dr. at C—— (Aveyron), married his first-cousin, and has three pretty children, all perfectly healthy and well formed.[1]

97. Sp. Ligustinus married his first-cousin, and had eight children six boys and two girls. At the time that Livy makes him narrate this case the two girls were married, and four of the boys grown up.[2]

98. A marriage between persons in no way related, which produced two children, who both died, was followed by another marriage on the part of the husband, with his first-cousin. This last marriage has resulted in one healthy girl.

99. A marriage between first-cousins. The young wife had three miscarriages one after the other, each at six weeks. She was from puberty subject to dysmenorrhœa ; and at every return of the catamenia suffered from uterine congestion, ending in hæmorrhage.[3]

100. Two first-cousins, married and have five children. The husband was scrofulous, and his wife, though naturally of good constitution, is far from healthy. Yet all the children enjoy the best health, though one was delicate during infancy.[4]

101. A marriage between first-cousins, which proved barren.

102. A marriage between first-cousins, which produced five children, three boys and two girls. The eldest son is now married ;[5] another is as yet unmarried, and aged twenty-five ; the third died of epilepsy, aged twenty. The eldest girl married a person not related to her ; and during the three years of married life she has passed has had one child. The second girl married a little before her elder sister.[6]

103. The eldest son mentioned in Case No. 102 also married a first-cousin, and already has two healthy children.

104. The second daughter mentioned in Case No. 102 also married her first-cousin, and has as yet three children, all perfectly healthy.[7]

[1] Cases Nos. 93 to 96 reported by Devic, *Gaz. Méd. de Paris*, 1863, xviii. 158.

[2] This case is interesting as bearing on the Roman law. It is related by Livy. *Hist.* book xlii. 34 : 'Quum primum in ætatem veni, pater mihi uxorem fratris sui filiam dedit ; quæ secum nihil attulit, præter libertatem pudicitiamque, et cum his fecunditatem, quanta vel in diti domo satis esset. Sex filii nobis, duæ filiæ sunt, utræque jam nuptæ. Filii quatuor togas viriles habent, duo prætextati sunt.'

[3] Cases Nos. 98 and 99 reported by Defert. (See Dally, *Recherches*, etc. p. 50.)

[4] Case No. 100 reported by Dally, *ibid.*

[5] See Case No. 103.

[6] See Case No. 104.

[7] Cases Nos. 101 to 104 reported by Ancelon, *Comptes Rendus*, 1864, lviii. 166, 167.

105. A marriage between first-cousins, which produced four children, three girls and one boy. The girls are all healthy, but the boy is an idiot. He was the last birth, and the mother had been frightened.

106. A marriage between first-cousins, which produced twins, but Dr. Down does not say whether any more were born. The second twin, a girl, is small, deaf, an idiot, and had fits for many years. The father is healthy, but his brothers and sisters have a tendency to consumption. The mother's parents were also distantly related, and she died from a tumour in the brain. Several of her relatives died of consumption, and a cousin of her daughter's was insane from epilepsy.

107. A marriage between first-cousins, which produced at least eight children. One of these, a boy, died of consumption, and the eighth-born was an idiot. The father was sound in mind, but delicate and intemperate; his relatives were healthy. The mother had twice given birth to twins; she was healthy, but in the seventh month of her pregnancy she was frightened by a cat, and was ill for a week in consequence, while the child became an idiot.

108. A marriage between first-cousins, which produced six children. Of these four boys and a girl died of consumption, and the youngest, a girl, is an idiot. The father was sound in mind, but died of pulmonary hæmorrhage. One of his sisters died of consumption. The mother had lost a sister from consumption, and was consumptive herself.

109. A marriage between second-cousins. The mother had been married before to a person who was not related to her, by whom she had three children, two girls who were healthy, and a boy who was epileptic. The second marriage produced four children; first, two healthy girls, then a boy, who is an idiot, and then a girl of weak mind. The father was healthy and sound in mind; but his father had lost his sight when young, and two of his brothers had died of consumption. The mother was also healthy and sound in mind, but her father's sister was insane. She believed that the idiocy of the first boy was caused by a fright she had had, and that of the girl from constant fear that she also might be an idiot.

110. A marriage between first-cousins, which produced six children, three boys and three girls. One of these girls, the eldest of all the children, was an idiot. At the time of her birth, the mother suffered greatly from anxiety regarding pecuniary matters, parturition was difficult, the forceps were employed, and the head greatly crushed. The father was delicate when young; his uncle is imbecile, an aunt died of phthisis, and his father was eccentric and intemperate. The mother is very deaf, and her sister died from cancer.

111. A marriage between second-cousins, which produced at least six children. Of these the eldest, a boy, died of acute hydrocephalus; the sixth, a girl, is an idiot, but all the rest are bright and healthy. The father had fits when a child, and is weak and ailing, and feeble in mind. The mother is not very strong, and lost a brother from consumption. She says she saw a girl precisely like her idiot daughter, both mentally

and physically, at a time when she was seven months advanced in pregnancy.

112. A marriage between third-cousins, which produced eleven children, nine boys and two girls. The seventh birth was twins, a boy and a girl, of which the former is an idiot. All the rest of the children are healthy and intelligent. The father is healthy and sound in mind, but very deaf. The mother is also healthy, but all her relations are consumptive.

113. A marriage between first-cousins, which produced six children, three boys and three girls. The fourth-born, a boy, is an idiot ; all the remaining children are particularly intelligent. The father died of Bright's disease, after five years' illness. The mother is healthy, but nervous ; had bad health during the pregnancy, and was much distressed at hearing her eldest child had croup at Paris, and could not procure a doctor. She had besides a very bad labour, owing to the large size of the child.

114. A marriage between second-cousins, which produced six children, four boys and two girls. One boy died of scarlatina ; one is rather delicate ; the fourth-born, a boy, is an idiot ; the remaining three are healthy and intelligent. The father is sane and sound ; but has lost five brothers and sisters by consumption, and has a sister insane. The mother has had a fistula, but is sound in mind. She was very low-spirited during her fourth pregnancy at the prospect of having another child, and but small means to support her family.

115. A marriage between first-cousins, which produced eleven children, five boys and six girls. The first and eleventh births, both boys, are idiots ; one boy died of inflammation of the lungs ; another of convulsions when a fortnight old ; two sisters who were twins died, the one at birth, and the other of convulsions when ten days old ; another girl died of fever ; and another besides is dead. The remaining three children are all healthy and intelligent. The father was healthy, but below the average in mental power. The mother has always been delicate, is very nervous, had an aunt insane, and all her brothers and sisters died young.

116. A marriage between first-cousins, which produced twelve children. The eleventh-born is an idiot ; all the remaining children were endowed with average mental and physical power. The father enjoys good health, but is very irritable and desponding ; his mother died of consumption, and he lost one sister from congestion of the brain. The mother also is healthy, but she lost a sister from consumption, and has an uncle who is imbecile. When in the fourth month of her eleventh pregnancy, she suffered severely from sea-sickness ; the infant's umbilical cord had to be divided before birth, animation was suspended, and had to be restored artificially.

117. A marriage between first-cousins, which produced nine children, two boys and seven girls. The fourth-born a boy, is an idiot ; one of the others had no parietal bone, and lived but two days ; four died at birth but seemed perfectly constituted ; and the first three children were

healthy and lived. There was one miscarriage of a child with one leg. The father was healthy, sober, and steady. The mother suffers from chronic bronchitis, but is sound in mind, and comes of a healthy family. The ages of the father and mother at the birth of the idiot were forty-one and twenty-nine; the labour was lingering, ergot of rye was given twice, and the infant's head was misshapen.

118. A marriage between first-cousins, which produced six children. Of these one boy was subject to fits, and died of consumption; another was an idiot; a girl died of epilepsy at seven years of age; and all the rest are bright and healthy. The father is in good health, but of low intelligence. The mother is delicate, and lost a brother and sister from consumption.

119. A marriage between second-cousins, which produced seven children. Of these, one died of hydrocephalus, one of scarlatina, one of phthisis, and four are idiots. The father has average health, but is a drunkard, and six of his immediate relatives stammer. The mother is very poor in health, suffers from uterine disease, and two of her sisters died young from consumption. She was ill during the whole of her second pregnancy; fell down stairs when in the seventh month; was nervous, and suffered from hallucinations.

120. A marriage between first-cousins, which produced four children. The last-born, a boy, is an idiot. The father is healthy, but his father was eight months in a mad-house, though he ultimately recovered; his mother was very eccentric; and his sister had a spinal disease, and died of consumption. The mother was herself healthy, but all her immediate relatives were consumptive. She had much trouble and business difficulties during her last pregnancy.

121. A marriage between first-cousins, which produced six children, all boys. Of these the eldest is an idiot; one died in a fit during whooping-cough; one of bronchitis; one is hemiplegic; another, three and a half years old, cannot talk; is only just able to walk, and has a large head. The father is a very weak and nervous man, faints frequently, and his whole bearing is like one suffering from mercurial tremor. The mother is in good health, but she is very nervous, and her mother also is very nervous and bordering on insanity; one uncle of hers died insane, and a cousin is imbecile. In the sixth month of her first pregnancy she tumbled down stairs, and about the same time she was much frightened by her husband falling down in a fainting fit, and this brought on uterine contractions and a considerable amount of flooding.

122. A marriage between first-cousins, which produced two children. The eldest was born with animation suspended, and he is an idiot. The second, a girl, was born prematurely, and died three days after birth. The father is healthy but irritable; two of his sisters died of consumption, and one of these was also subject to hallucination. The mother died of consumption; an uncle was insane, brought on as it was supposed by alcoholic abuse. She was frightened two months before her first confinement by stepping on an adder; the labour was lingering and the child's head much distorted.

123. A marriage between first-cousins, which produced five children, two boys and three girls. The second-born, a boy, was an idiot, as was also one of his sisters. Another sister was quite helpless, and died at the age of fourteen months. The father is healthy and of sound mind. The mother's mother was insane, her aunt died in a mad-house; and a cousin suffers after every confinement from puerperal mania.

124. A marriage between first-cousins, which produced five children, four boys and one girl. Of these the eldest, a boy, is an idiot; the second and third boys were twins, and are very healthy, and sound in mind; the fourth boy died of whooping-cough; the girl is healthy in every respect. The father died of contraction of the bowel, and was quite healthy, but his mother used to stammer. The mother was very nervous, and was frightened during her first pregnancy by an idiotic man. The labour lasted twenty-eight hours, and she was delivered by instruments.[1]

125. A marriage between uncle and niece proved barren.

126. A marriage between uncle and niece produced three children with goîtres. Of these two were also crétins, and one was intelligent.

127. A marriage between uncle and niece produced one son, who was epileptic, and one crétin. The father was epileptic, and the mother was nervous and hysteric.

128. A marriage between first-cousins, which proved barren.

129. A marriage between first-cousins, which also proved barren.

130. A marriage between first-cousins, which produced healthy children.

131. A marriage between first-cousins, which also produced healthy children.

132. A marriage between first-cousins, which resulted in four children, who died young, and two cases of phthisis.

133. A marriage between first-cousins, which produced five children. Of these one was epileptic and died of phthisis; one died at four years of age of typhus; one, aged six, looks tuberculous; one suffers from hydrocephalus; and one is an idiot and tuberculous.

134. A marriage between first-cousins, which produced nine children and two abortions. Of these nine children two suffers from hydrocephalus, one died of croup, and the remaining six are healthy.

135. A marriage between first-cousins, which produced twelve children. Of these seven died very young, and the remaining five are healthy.

136. A marriage between first-cousins, thirteen of the children born from which died young, and five were slightly scrofulous.

137. A marriage between first-cousins, which proved barren.

138. A marriage between first-cousins, which produced two deaf-mutes.

139. A marriage between first-cousins, which produced four deaf-mutes.

[1] Cases Nos. 105 to 124 reported by Down, *London Hospital Reports*, 1866, iii. 226-231. They are taken haphazard from a number of investigations made on the parentage of idiots.

140. A marriage between third-cousins, which produced two deaf-mutes.

141. A marriage between uncle and niece, which produced healthy offspring.

142. A marriage between uncle and niece, which produced three children, two of whom died young, and one is healthy and lives.[1]

143. A marriage between uncle and niece, which produced healthy but dwarfish children.

144. A marriage between first-cousins, which also produced healthy though dwarfish children. In this case the mother was scrofulous.

145. A marriage between first-cousins, which produced one healthy child, a girl.

146. A marriage between first-cousins, which produced healthy children.

147. A marriage between first-cousins, which produced six tuberculous children, five of whom are already dead. The parents in this case were tuberculous.[2]

148. A marriage between uncle and niece, which proved barren.

149. A marriage between first-cousins, which produced healthy offspring.

150. Another marriage between first-cousins, which also produced healthy offspring.

151. A marriage between first-cousins, which produced scrofulous children, and one was also rachitic. The parents in this case were scrofulous.

152. A marriage between first-cousins, which produced scrofulous children. The parents were scrofulous.

153. A marriage between first-cousins, which produced two children; one still-born, and the other healthy, and still alive. The one parent was club-footed and the other scrofulous.

154. A marriage between second-cousins. Of the children born one child, a girl, is scrofulous.[3]

155. A marriage between first-cousins, which resulted in two abortions in the fourth months, four premature still-births, and two children who died before they had reached their fifth year.

156. A marriage between first-cousins, which produced ten children. The first birth was twins, premature and deformed; the second birth was again twins, who died before they were five months old; after these the remaining six children were born, who are all healthy.[4]

157. A marriage between first-cousins, which produced ten children.

[1] Cases Nos. 125 to 142 reported by Lombroso; see Mantegazza, *Studj sui Matr. Cons.* etc. pp. 20-26. In these cases and the following cited by M. Mantegazza it is a pity that the total number of children is rarely given, and still more rarely the state of health of the parents and relations.

[2] Cases Nos. 143 to 147 reported by Sargenti; see Mantegazza, *ut sup.* p. 20.

[3] Cases Nos. 148 to 154 reported by Moretti; see Mantegazza, *ut sup.* p. 22.

[4] Cases Nos. 155156 reported by Longhi; see Mantegazza, *ut sup.* p. 22.

Of these three were either imbecile, paralytic, or died young ; and the remaining seven are perfectly healthy. The mother was consumptive.

158. A marriage between first-cousins, which produced two epileptic children.[1]

159. A marriage between first-cousins, which produced scrofulous children.

160. A marriage between first-cousins, which produced scrofulous, tuberculuous, puny children.

161. A marriage between first-cousins, which produced two children, who were deformed, and died young.

162. A marriage between first-cousins, which produced four children, who all died of phthisis.

163. A marriage between first-cousins, which produced scrofulous and dwarfish children.

164. A marriage between first-cousins, which resulted in scrofulous and rachitic children.

165. A marriage between first-cousins, which produced one scrofulous child, one albino, and one daughter, who was a crétin.

166. A marriage between first-cousins, which produced healthy offspring.

167. A marriage between first-cousins, which produced only one child, a boy, very puny, and who died at the age of six months.

168. A marriage between first-cousins, which proved barren.

169. A marriage between second-cousins, which proved barren.

170. A marriage between uncle and niece, which produced twins, who died a few days after birth, and one deaf-mute.[2]

171. A marriage between uncle and niece, which produced children of average health.

172. A marriage between uncle and niece, which produced many, but scrofulous children.

173. A marriage between uncle and niece, which produced healthy offspring.

174. A marriage between first-cousins, which produced many, and healthy children.

175. } Marriages between first-cousins, which produced healthy
176. } children.
177. }

178. A marriage between first-cousins, which produced only few children, and these died young.

179. A marriage between a man and his half-sister, which produced six children. Of these two, who died young, were tuberculous, and three girls are married. The first of these marriages proved barren. The second produced three children, who died young ; but the mother in this case was tuberculous. The third marriage produced healthy

[1] Cases Nos. 157 to 158 reported by De Orchi ; see Mantegazza, *ut sup.* pp. 22, 24.

[2] Cases Nos. 159 to 170 reported by Demeva ; see Mantegazza, *ut sup.* pp. 22, 24.

children. The son was consumptive, and has tuberculous children. The mother of the six children was tuberculous.[1]

180. A marriage between first-cousins, doubly related, which produced six children. Of these two died almost immediately after birth, and four are alive and healthy.

181. A marriage between first-cousins, which produced healthy offspring.

182. A marriage between first-cousins, which produced three children. Of these one was healthy, and two were tuberculous.

183.
184.
185. Marriages between second-cousins, all resulting in healthy
186. offspring.
187.
188.

189. A marriage between third-cousins, and the wife was also derived from a consanguineous marriage. There were five abortions, and one girl still-born. The mother was slightly rachitic.

190. Marriages between third-cousins, which resulted in healthy off-
191. spring.

192. A marriage between fourth-cousins, which produced healthy offspring.[2]

193. A marriage between first-cousins, which produced three children. Of these one was a deaf-mute, and the two others were healthy. Deaf-mutism was previously unknown in the family.[3]

194. A marriage between first-cousins, which proved barren. Both were healthy.

195. A marriage between first-cousins, which also proved barren. Both were healthy. The husband when sixty years of age married again, and has a child every year.

196. A marriage between first-cousins, which produced six children. Of these four who were suckled by their mother died in their first year, scrofulous and rachitic; the two others were suckled by a healthy nurse, and, though ailing, they are alive.

197. A marriage between first-cousins, which produced many children, who are all either scrofulous or rachitic.[4]

198. A marriage between first-cousins, which produced scrofulous children.

199. A marriage between first-cousins, which produced five children, two boys and three girls. Of these all three girls are in bad health, and one died at the age of ten years, scrofulous, and very small for her age. The two boys are healthy.

[1] Cases Nos. 171 to 179 reported by Roboletti; see Mantegazza, *Studj sui Mat. Cons.* etc. p. 24.

[2] Cases Nos. 180 to 192 reported by Liberali; see Mantegazza, *ut sup.* p. 24.

[3] Case No. 193 reported by Bizzozero; see Mantegazza, *ut sup.* p. 26.

[4] Cases Nos. 194 to 197 reported by Zaniboni; see Mantegazza, *ut sup.* p. 26.

200. A marriage between first-cousins, which produced four children. Of these one is imbecile and rachitic; the remaining three children are healthy. The father in this case was tuberculous.

201. A marriage between first-cousins, which produced one scrofulous girl and two abortions.

202. A marriage between first-cousins, which proved barren.

203. A marriage between first-cousins, which produced four children and one abortion. Of these four children two died young, one girl is scrofulous and ailing, and one boy is healthy. The mother is healthy, but the father was slightly scrofulous.

204. A marriage between first-cousins, which proved barren.

205. A marriage between first-cousins, which produced three children. Of these, two were healthy and one was epileptic. No case of epilepsy was previously known in the family.

206. A marriage between first-cousins, which produced healthy offspring.

207. A marriage between first-cousins, which produced healthy offspring.

208. A marriage between first-cousins, which produced two children, who were crétins.

209. A marriage between first-cousins, in which there were many abortions and four robust children born.

210. A marriage between first-cousins, which produced many deaf-mutes and imbeciles.

211. A marriage between first-cousins, which produced two children, still-born, and one epileptic boy.

212. A marriage between uncle and niece, in which there were four children born and six abortions. Of these four children two died in early youth.

213. A marriage between uncle and niece, which produced six children and five abortions. Of these six children one was paralytic.

214. A marriage between uncle and niece, which produced three children and four abortions. Of these three children one female infant was deaf.

215. A marriage between uncle and niece, which has produced five children, still young, and all healthy. The parents are healthy.[1]

216. A marriage between nephew and aunt, which produced healthy children.

217. An 'incestuous' marriage, which produced healthy children.[2]

218. A marriage between first-cousins. The hands of the parents were deformed, but those of their children were normal, and the children themselves perfectly healthy.[3]

219. A marriage between first-cousins, which produced two children, who both died in their babyhood.

[1] Cases Nos. 198 to 215 reported by Mantegazza, *ut sup.* pp. 22–26.
[2] Cases Nos. 216 to 217 reported by Turek; see Mantegazza, *ut sup.* p. 20.
[3] Case No. 218 reported by Dobell; see Mantegazza, *ut sup.* p. 20.

220. A marriage between first-cousins, which produced seven children. Of these three died in their infancy, and not one of the remaining four was 'bright.'

221. A marriage between first-cousins, which produced three children. Of these two boys died young, and the remaining girl has bad eyes.

222. A marriage between first-cousins, which produced a boy with club-foot, and another who died and was an idiot.

223. A marriage between first-cousins, which produced two children, who both died young.

224. A marriage between first-cousins, which produced children, who were blear-eyed and feeble.

225. A marriage between first-cousins, which produced two children, who were idiots.

226. A marriage between first-cousins, which produced two children, who were deaf mutes.

227. A marriage between first-cousins, which produced two children, who were blind.

228. A marriage between first-cousins, which produced three children, who were hermaphrodites.

229. A marriage between first-cousins, which produced one child, who was club-footed, one an idiot, one near-sighted, one ailing and irritable, one blind, and the rest feeble.

230. A marriage between first-cousins, which produced ten children, eight sons and two daughters. Of these two sons and one daughter cannot walk, and the youngest child is a deaf-mute.

231. A marriage between first-cousins, which produced eight children, one son and seven daughters. Of these three daughters are mentally deranged, and the rest are nervous.

232. A marriage between first-cousins, which produced eight children three sons and five daughters. Of these one daughter is an idiot and two others are feeble in mind.

233. A marriage between first-cousins, which produced five children. The first is healthy and bright, the rest are idiots.[1]

234. Two brothers, tall, strong, and vigorous, married two sisters, their first-cousins. The eldest still lives in the place of his birth, and has several children, of which only the eldest is a deaf-mute, aged twenty.

235. The other has been employed on the railway for six years at Besançon, and has at present six children. Of these the first, a girl aged twelve, is weak, small, and very timid, but otherwise healthy. The second, a girl aged ten, is slim, tall, and vigorous, but a deaf-mute. The third died young, and appeared to have been healthy. The fourth, a boy aged seven, is strong and big, but a deaf-mute. The fifth, a girl aged four and a half, is very small, talks badly, but hears well. The sixth, only three months old, seems but slightly sensible to noise.[2]

[1] Cases Nos. 219 to 233 reported by the Rev. C. Brooks; see Allen, *The Intermarriage of Relations*, pp. 13, 14.

[2] Cases Nos. 234 to 235, reported by Perron; see Boudin, *Comptes Rendus*, 1862, lv. 660.

236. A marriage between first-cousins, which produced four children. Of these one was a deaf-mute, one scrofulous, one an idiot, and one epileptic. There was a strong idiosyncrasy in the family of the parents, but no definite taint.[1]

237. A marriage between first-cousins, which produced four children. Of these two were twins, albinoes, and only lived forty-eight hours ; one, also an albino, only lived a year. The fourth is well formed, healthy, and not an albino.[2]

238. A marriage between first-cousins, which produced one congenital deaf-mute, besides another child, who became dumb and idiotic at the age of six years without assignable cause.

239. A marriage between first-cousins, which produced two congenital deaf-mutes. Seven of the cousins of these children were also deaf-mutes. The mother was herself the produce of a marriage between first-cousins.

240. A marriage between first-cousins, the parents of the wife being also first-cousins, which produced five congenital deaf-mutes. Two first-cousins of these children were also deaf-mutes. One of the five deaf-mutes married, but none of his children are deaf-mutes.

241. A marriage between third-cousins, which produced eight children. Of these two became dumb and idiots at the ages respectively of four and five years, without assignable cause.

242. A marriage between first-cousins, which produced one child who became dumb when three years old, without assignable cause ; another a girl was born dumb, and became paralysed shortly after birth.

243. A marriage between second-cousins, which produced five children, Of these two were congenital deaf-mutes. The father married again a person not related to him, and none of the six children resulting from this second marriage were deaf-mutes.

244. A marriage between second-cousins, which produced eight children. Of these three were mutes, one of the three being also deaf, another only dumb, and the condition of the third could not be ascertained.

245. A marriage between first-cousins, a child born from which became dumb at the age of two and a half years from fright in his sleep.

246. A marriage between persons not related, but the parents and grandparents of the husband were first-cousins. Two children born from it were congenital deaf-mutes.

247. A marriage between persons not related, but the wife's parents were first-cousins. They had one child, who was born dumb and an idiot.

248. A marriage between third-cousins ; the parents of the husband were besides first-cousins. A child born to this marriage was congenitally dumb, but the mother had been frightened during her pregnancy.[3]

[1] Case No. 236 reported by Carpenter, *Human Physiology*, p. 863, note.

[2] Case No. 237, reported by Goux; see Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 514.

[3] Cases Nos. 238 to 248 reported in the *Irish Census Returns for* 1871, *Status of Disease*, p. 21. There were probably more children than here reported.

249. A marriage between first-cousins, which produced five children. The eldest of these was sound in mind and body ; the second was imbecile ; the third died, but at what age and the cause of death is not known ; the fourth was imbecile ; and the fifth became insane.

The eldest son was married twice, and each time to a person not related to him. By his first marriage he had four children, of which two were healthy, one became insane in adult life, and one died in early infancy. By his second he had five children, of which one was healthy, one eccentric, one imbecile, and two insane.

250. A marriage between first-cousins, in which apparently the husband was derived from the family described in Case No. 249. Nine children were born, of whom the first was sound in mind, but scrofulous and weak-sighted ; the second was sane, but short, had an impediment in his speech, and a cleft palate ; the third was also sane, but suffered from spinal curvature ; the fourth was an idiot ; the fifth was sane, but suffered from bad sight ; the sixth was healthy in mind and body ; the seventh was imbecile, deformed, and obliged to use crutches ; the eighth was sound in mind and body, but short ; the ninth was an idiot and a dwarf.

The second married a person not related to him, and has several children, whose condition, however, is not known.

The third was unmarried.

The fifth married a lady not related to him, and the marriage proved barren.

The sixth also married a lady not related to him, and in this case also the marriage proved barren.

The eighth married a person not related to her, and has three children, whose condition is not known.

251. The eldest child of the last case (No. 250) married his first-cousin, and the marriage proved barren.

252. A marriage between first-cousins, which produced five children. Of these the first was eccentric, and remained unmarried ; the second was sound in mind and a good business man but rachitic ; the third was healthy ; the fourth was imbecile, dwarfish, and impossible to educate ; the fifth was an idiot and a dwarf.

The third married a gentleman not related to her, and had two children, of which one was an idiot, but the condition of the other was not ascertained.

253. A marriage between first-cousins, which produced several children. Of these one boy was an epileptic idiot, but all the rest of the children are sane and sound.

One of the daughters married a man not related to her, and had two boys, one an epileptic idiot and one healthy.

This last one married a woman not related to him, and had one girl, an epileptic idiot, but all the rest of his children were sane and sound.[1]

254. A marriage between first-cousins, whose fathers were brothers

[1] Cases Nos. 249 to 253 reported by Mitchell, *Mem. read before the Anthrop. Soc. of London*, 1866, ii. 405, 406, 408.

both salt-workers by profession, and in good health. They had six children, two boys and four girls, all of whom were healthy and intelligent.

255. A brother of the father in the former case (No. 254) also married his first-cousin ; both were salt-workers in the marshes, and they had four children, one boy and three girls. The children are quite healthy, and are all very intelligent.

256. A marriage between first-cousins, the children of two sisters. They were fishers by profession, healthy, and had four children, one boy and three girls. Of these one girl died of a chest-disease after she was married, and another girl became slightly deaf after she was seventeen years of age in consequence of a sore throat, which, in its turn, was caused by exposure to the mists of the marshes while she was engaged in her work at night. The other children are very healthy, and all four are very intelligent. The father was rather dull, but the mother was intelligent.

257. A marriage between first-cousins, the children of a brother and of his sister. Both were intelligent, handsome, and healthy, and salt manufacturers by profession. By the time they had been married six years, they had three children, one boy and two girls, all healthy and very intelligent.

258. A marriage between first-cousins, the children of a brother and of his sister. They were workers in the salt marshes, both handsome and intelligent, and had six children, three boys and three girls. Of these one boy died at nine years of age from an abscess in the thigh, followed by necrosis of the femur ; the others are all healthy and intelligent. The father had had inflammation of the lungs, and was since subject to catarrh ; the mother had never had an illness.

259. A marriage between second-cousins. The husband was a salt-worker, and the wife a worker in the marshes. Three children were born to them, two boys and one girl. Of these one boy died during service with the army ; a second boy is married, and has a healthy child ; and the girl is in perfectly good health.

260. A marriage between second-cousins, both dealers by profession, and the husband subject to articular rheumatism. Five children were born to them, of which one boy died at the age of fourteen months from a spinal disease; a daughter died at the age of seventeen years from typhoid fever ; and the other children are all healthy. One daughter, aged twenty, is very big and tall, and a child only twelve years old is very big and strong. The father was very tall.

261. A marriage between second-cousins, in which the husband was a muleteer and the wife a worker in the salt marshes. When the parents were aged respectively thirty-two and twenty-three years, they had one child, very intelligent, and in good health.

262. A marriage between second-cousins the husband a salt factor, and the wife a worker in the marshes. The health of both was good. They had already six children by the time the husband was aged thirty-four, and the wife thirty-six, two boys and four girls. There was besides one abortion. All the children are healthy.

263. A marriage between second-cousins. The husband was a worker in the salt marshes, and healthy ; the wife was a salt factor, older than her husband by one year, and very nervous. They had no children.

264. A marriage between second-cousins. The husband was a worker in the salt marshes, rather a drunkard, and of poor intelligence. The wife was a dealer, fifteen years younger than her husband, intelligent, and worked for both. They had six children, two boys and four girls, all healthy and intelligent.

265. A marriage between cousins of the seventh civil degree of relationship. The husband was a lighterman, and died, when only thirty-three years old, of brain-fever. The wife was a salt-marsh worker, healthy, and intelligent. They had two children, one boy and one girl, who are both healthy, intelligent, and tall.

266. A marriage between persons related in the seventh civil degree. The husband was a shoemaker, and healthy ; the wife died of a liver disease. They had eight children, two boys and six girls, and there was also an abortion. One boy died at the age of two years.

267. A marriage between second-cousins. The husband was a fund-holder, in good health. They had three children, one boy and two girls. These three children are healthy ; one girl is married, and has four healthy children, while the other is a tall, handsome woman.

268. A marriage between second-cousins. The husband was a shoemaker. They had three boys, all in good health, and besides one abortion.

269. A marriage between second-cousins. The husband was a salt factor, in good health ; the wife, a worker in the salt marshes, and four years younger than her husband. They had three children, of which one child died the fifth day after birth, and another of croup ; the third was, however, quite healthy. The mother's mother is mad.

270. A marriage between second-cousins. The husband, a dealer, and Mayor of Batz, was healthy, but not very intelligent. The wife was the same age as her husband, and only married when aged thirty-eight. She was rather stout, and rather deaf. They had five children, of which two died at birth, two of convulsions at the respective ages of eight and ten days, and the remaining child, a girl, is now aged twenty, and is perfectly healthy.

271. A marriage between second-cousins. The husband was a salt factor, in good health ; but his wife was poorly, and frequently bled by means of leeches, and five years younger than her husband. They married young, and had one child, a boy, who is healthy. The father of the wife was rather a drunkard.

272. A marriage between second-cousins. The husband was a salt factor, healthy, and four years his wife's senior. The wife was married when aged twenty-seven. They have four children, two boys, and two girls, all healthy and very intelligent.

273. A marriage between cousins related in the fifth civil degree. The husband was a salt factor, and three years his wife's senior. The wife, like her husband, was perfectly healthy, and married at the age of

twenty-eight. They had four children, two boys and two girls, all healthy and intelligent.

274. A marriage between second-cousins. The husband was a worker in the salt marshes, rather a drunkard, and four years his wife's senior. The wife followed the same profession as her husband. They had four children, one boy and three girls, of which one girl, aged nineteen, is scrofulous and consumptive. Nothing is known concerning the health of the father's parents.

275. A marriage between second-cousins. The husband was a salt factor, healthy, and two years his wife's senior. The wife was also healthy, and worked in the salt marshes. They had five children, two boys and three girls, all healthy.

276. A marriage between second-cousins. The husband was a worker in the salt marshes, very healthy, but had been rather addicted to drunkenness ever since his twentieth year. The wife followed the same profession as her husband, and was five years his junior. They had nineteen children, of which eight are living, the rest having all died at ages ranging from two years to thirty. Not one, however, was malformed or infirm; they were all carried off by acute diseases.

277. A marriage between second-cousins. The husband was a worker in the salt marshes; two years his wife's senior, healthy, but fond of drinking. The wife was of the same profession as her husband. They had two children by the time the wife was thirty years old, both boys, and healthy.

278. A marriage between second-cousins, both workers in the salt marshes, and both healthy. They married when the wife was aged twenty-three, and have eleven children, eight boys and three girls. There was also an abortion. All the children were healthy and intelligent.

279. A marriage between second-cousins, both workers in the salt marshes, and both healthy. The wife was three years her husband's junior. They had seven children, five boys and two girls, all of them healthy and intelligent.

280. A marriage between second-cousins, which proved barren. Husband and wife were workers in the salt marshes, healthy and intelligent, and the wife was two years her husband's junior. They have been married twenty years. The wife was 28 at marriage.

281. A marriage between second-cousins. The husband was a salt factor, who ultimately died of asthma. His wife was a worker in the marshes, and healthy. They had two children, both boys, who are healthy and intelligent.

282. A marriage between second-cousins. The husband was a salt factor. The wife was of the same profession and healthy. They had four children, all boys, of which two died of croup, one is an advocate, and one a salt factor.

283. A marriage between second-cousins. The husband was a salt factor, healthy, and three years his wife's senior. The wife was a worker, married at the age of twenty-four, and was healthy. By the time they

had been married five years they had two children, both boys, healthy, and big for their age.

284. A marriage between second-cousins. The husband was healthy and a salt factor by profession. The wife was a worker in the marshes They had five children, of which three died at the ages respectively of three, four, and seven years, all of acute diseases. One of the two survivors is married, and has four healthy children. The father of the husband was rather a drunkard.

285. A marriage between second-cousins. The husband was a sailor, in good health. His wife was a worker in the salt marshes, and the same age as her husband. They had but one child, who died of croup, aged four years.

286. A marriage between second-cousins. The husband was a drunkard, and two years his wife's senior. The wife was healthy, intel ligent, and worked for both. They had three children, one boy and two girls, all healthy and intelligent.

287. A marriage between second-cousins. Husband and wife were workers in the salt marshes, both were healthy, and the husband was four years his wife's senior. They had one child, a girl, healthy, and now aged four years.

288. A marriage between second-cousins. The husband was a salt factor, in good health, and two years his wife's senior. She was a worker in the salt marshes, and also healthy. They have been married five years, and have as yet one child, a boy, very healthy and intelligent.

289. A marriage between second-cousins. The husband was a salt factor, and one year his wife's senior. They had one child, a girl, who died, aged eight days, from an illness called céran, characterised by fever and purple spots on the skin.

290. A marriage between third-cousins. The husband was a carpenter, in good health ; the wife was also in good health, and four years the husband's junior. They had four children, three boys and one girl, of which one child died from an accident, and the others are very healthy.

291. A marriage between third-cousins. Husband and wife were workers in the salt marshes, and in good health ; the wife was eight years her husband's junior. They had four children, all girls, and very intelligent.

292. A marriage between third-cousins, both of them workers in the salt marshes, and both in the enjoyment of good health. The husband used occasionally to get drunk, and was six years his wife's senior. They had two children by the time the wife was aged thirty, both boys, very strong and intelligent.

293. A marriage between third-cousins, both workers in the salt marshes. The husband was not particularly healthy, and was twenty-two years his wife's senior. They had six children and one abortion. These children, two boys and four girls, are very healthy and intelligent.

294. A marriage between third-cousins, both workers in the salt marshes. The husband on some occasions got drunk, and was twelve years his wife's senior. They had one child, a boy, healthy and intelligent.

295. A marriage between third-cousins, both workers in the salt marshes, in good health, and of the same age. By the time they were thirty-six years old three children had been born to them, two boys and one girl. Of these one child died of croup, but the others are all healthy.

296. A marriage between third-cousins, both workers in the salt marshes, and in good health. The husband was eleven years his wife's senior. By the time he was aged forty they had one child, a girl, very healthy and intelligent.

297. A marriage between cousins related in the seventh civil degree. The husband was a landowner, at least fifteen years his wife's senior, in good health, but was already dead when his wife was aged thirty-seven. The wife was also healthy. They had six children, one of whom died of croup when two years old, and the rest are very healthy.

298. A marriage between third-cousins. The husband was eight years his wife's senior, a Customs officer by profession, and in the enjoyment of good health. The wife was a worker in the salt marshes, healthy and intelligent. When she was aged twenty-five, one child had been born to them, healthy and intelligent.

299. A marriage between third-cousins. The husband was a day labourer, in good health, addicted to occasional drunkenness, and six years his wife's senior, who was a worker in the salt marshes, and also in good health. When the wife was twenty-three, one child had been born to them; it is aged fifteen months, is very strong, intelligent, and already speaks.

The other marriages which have taken place in the Commune of Batz were all between relatives, but in more distant degrees, generally between fifth-cousins.[1]

300. A marriage between first-cousins once removed, which produced seven children, all healthy. Two of these married, and have a child each.

301. A marriage between first-cousins once removed, which produced twenty healthy children.

302. One of these children married a first-cousin, and had six healthy children.

303. One of the children in the last case married her first-cousin once removed, and the marriage proved barren.

304. Another of the children, Case No. 301, married his first-cousin, and had five children, who were scrofulous, ophthalmic, and wizened.

305. Another married his first-cousin, and had twelve children, of which seven died, and the five remaining are scrofulous and poorly.

306. Another married her first-cousin, and had five children, of which one was a mute, one club-footed, one epileptic, and two rachitic.

307. Another married her first-cousin, and had nine children, of which five died young.

308. Another married her first-cousin once removed. The marriage proved barren during its eleven years.

[1] Cases Nos. 254 to 299 reported by Voisin, who examined *all* the inhabitants of the Commune of Batz; see the *Mém. de la Soc. d'Anthrop. de Paris*, 1865, ii. 448-459.

309. A marriage between first-cousins once removed, which produced eight healthy children.

310. One of these married her first-cousin once removed, and had seven children, who all died young.

311. A marriage between first-cousins, which produced ten children, the females rachitic.

312. One of these children married her first-cousin, also the child of relatives, and had three healthy children.

313. Another married her first-cousin once removed, which marriage proved barren. She was married a second time to a man previously unrelated to her, and had two children in the first two years.[1]

314. A marriage between first-cousins, which produced four healthy children.

315. A marriage between first-cousins once removed, which produced 'several' children, of poor health, and scrofulous.

316. A marriage between first-cousins, which produced two healthy girls. One of these that married proved to be barren.

317. A marriage between first-cousins once removed, in which the wife was the daughter of relatives, and which produced three healthy children.

318. A marriage between first-cousins once removed, which produced twelve children. Of these four died young, two were mutes, and one a crétin.

319. A marriage between first-cousins. The husband had been married before, also to a first-cousin (see Case 302). This marriage produced two boys, who were both rachitic when young.

320. One of these boys married his aunt, the sister of his father, and had four children, all rachitic, two of which died young.

321. The other son (Case 319), married his niece, his brother's daughter (Case 320), and the marriage proved barren.

322. Another son (Case 320), married his first-cousin, and had one child.

323. A marriage between first-cousins, which produced one child.

324. A marriage between first-cousins, which produced two children, both healthy.

325. A marriage between first-cousins, which produced, up to the time of the report, three children. Of these two died young, and one was poorly.[2]

326. A marriage between uncle and niece, which produced seven children, of which the eldest, a girl, died young of meningitis, and the youngest, also a girl, of gastro-enteritis shortly after birth. The remaining five were healthy.

327. A marriage between first-cousins, which produced five children, all healthy.

328. A marriage between first-cousins, which produced three healthy girls.

[1] A third daughter married a first-cousin once removed, but the result is stated variously by M. Poncet. On p. 199 he says seven healthy children were born. On pp. 201 and 209 (observation xxvii.) he says the wife was barren.—'Mariages Consanguins à la Noria,' in the *Recueils de Mém. de Méd.* etc. Paris, 1865.

[2] Cases Nos. 300 to 325 reported by M. Poncet; see 'Des Mariages Consang. à la Noria,' in the *Recueils de Mém. de Méd.* etc. Paris, 1865, xiv. 193–214.

329. A marriage between first-cousins, which produced three healthy and particularly strong boys.

330. A marriage between first-cousins, which produced three healthy children. The husband died early.

331. A marriage between first-cousins, which produced several healthy children.

332. A marriage between first-cousins, which produced several healthy children.

333. A marriage between first-cousins, which produced seven healthy children.

334. A marriage between first-cousins, which produced three healthy children.

335. A marriage between first-cousins, which produced several healthy children.

336. A marriage between first-cousins, which produced several healthy children.

337. A marriage between first-cousins, in which the husband was born of first-cousins, and which produced three handsome and healthy children.

338. A marriage between first-cousins, in which the wife now married for the second time. Four healthy children were born.

339. A marriage between first-cousins, which produced two children. The youngest died of diarrhœa, the result of weaning.

340. A marriage between first-cousins, which produced three children. Of these one died young of croup; the other two were twins, and are healthy.

341. A marriage between first-cousins, which produced four children, of which two died young, and the remaining two are strong and healthy. The husband in this case died of phthisis.

342. A marriage between first-cousins, which produced four children. Of these two died young of acute meningitis, and the remaining two are healthy.

343. A marriage between first-cousins, which produced eight children. The eldest died immediately after birth of dystokia, three died of typhoid fever, one of scarlatina, the remaining three, though of lymphatic temperament, are healthy. In this case both parents were of lymphatic temperament, especially the mother, who was in addition subject to herpes.

344. A marriage between first-cousins once removed, which produced four healthy children.

345. A marriage between first-cousins once removed, which produced eight children. Of these two died young, and two when over twenty years old of typhoid fever. The remaining four are strong and healthy, and two who married have healthy children.

346. A marriage between first-cousins once removed, which produced three healthy children.

347. A marriage between first-cousins once removed, which produced four healthy children.

348. A marriage between first-cousins once removed, which produced three children. The eldest died of albuminuria, one of the sequelæ of scarlatina; the second was killed by a fall from a carriage; the third is healthy.

349. A marriage between first-cousins once removed, which produced three healthy children.

350. A marriage between first-cousins once removed, which produced three children, of which one died young.

351. A marriage between first-cousins once removed, which produced two healthy children.

352. A marriage between first-cousins once removed, which produced seven children. Of these one died of albuminuria, a sequel of scarlatina; another had a contraction of the tendon of Achilles, which came on six or seven months after birth; the others were all healthy and had nothing the matter with them.

353. A marriage between first-cousins once removed, in which the wife now married for the second time. Four children were born, of which two died young and one was drowned. The other one was well and vigorous.

354. A marriage between first-cousins once removed, which produced three children. Of these one died young, one died at the age of seventeen of typhoid fever, and the third is healthy and the father of two healthy children.

355. A marriage between first-cousins once removed, which produced six children, all healthy.

356. One of the children in the last case married his niece and had one child, now aged about thirteen, healthy but not very strong.

357. Another of the children in Case 355 married his first-cousin, and has one healthy child.

358. A marriage between first-cousins once removed, which produced three children. Of these two died young, and one is healthy. The mother seemed to have a scrofulous tendency.

359. A marriage between first-cousins. Only one child was born in fifteen years.

360. A marriage between first-cousins once removed, in which there was only one pregnancy, ending in a miscarriage after seven months.

361. A marriage between uncle and niece, in which the latter was aged about twenty years and the former about double. No children were born.

362.
363.
364.
365. } Marriages between first-cousins, which proved barren.

366. A marriage between first-cousins, which produced three children, all well-formed and healthy, with the exception that one has thrice had attacks of St. Vitus's dance. The mother was of lymphatic temperament and had also had a slight attack of chorea in her youth.

367. A marriage between first-cousins, which produced six children, of

which one died of croup, another of an eruptive fever, and a third had several attacks of convulsions. With these exceptions all the children were healthy and finely constituted. The father had had convulsions in his infancy.

368. A marriage between first-cousins, which produced several healthy children and one which had an attack of apoplexy followed by hemiplegia. In this case the mother's father had died of apoplexy.

369. A marriage between first-cousins, which produced three children. Of these one was a congenital deaf-mute, the other two were healthy. The mother's brother in this case was deaf and an idiot.

370. A man of fifty, who had had no children by his first wife, married his niece aged twenty-one. Two children were born, healthy but of lymphatic temperament, and one through malformation of the middle ear is deaf on that side. The mother in this case is of lymphatic temperament; and the father's brother, stone-deaf.

371. A marriage between first-cousins, which produced five children. Of these two were idiots, and died at about thirty years of age. Several members of the mother's family were mentally afflicted.

372. A marriage between first-cousins, which produced five children. Of these one is rather imbecile. There had been a case of madness in the mother's family.

373. The husband in the last case on his wife's death married his niece, by whom he had five more children, of which another was an idiot. But in this case also one of the mother's family had been mad.

374. A marriage between first-cousins, which produced five children. Of these the eldest is an idiot; the second died of phthisis aged twenty years; the three others are healthy. In this case the father's sister is mad, and two other members of his family are not quite sane.

375. A marriage between first-cousins, which produced five children. Of these two are partially deaf; but one of them became so only after a severe fall, and the other became so at the age of about four years. The father in this case had injured his spine, and there was, in all probability, insanity in his family.

376. A marriage between uncle and niece, in which the latter was about twenty years younger than her husband. Two children were born of which one was an idiot and the other of low intelligence.

377. A marriage between first-cousins, which produced two children, one congenitally blind, the other rickety.

378. A marriage between first-cousins once removed, which produced ten children. Of these three died young; one at twenty years of age of small-pox; one is hump-backed; one became a deaf-mute when aged six; and one is almost an idiot; the remaining three are healthy. The mother was delicate.

379. A marriage between first-cousins, in which the husband, himself the issue of a marriage between first-cousins, was hump-backed. Three children were born, of which two died of hydrocephalus at seven months of age, and one of dysentery at eighteen months.

380. A marriage between first-cousins once removed, which produced

four children. Of these two died at about seven or eight years of age of meningitis ; one became at seventeen years of age epileptic ; and the fourth is poorly.

381. A marriage between first-cousins, which resulted in an abortion at three months, and one healthy child.

382. A marriage between first-cousins, which produced ten children. Of these one stammers, and another has his spine slightly incurved ; none of the others have anything the matter with them. One married a person who was not related to him, and has two healthy children.

383. Another married his niece, and has one child who stammers, and another healthy.

384. The stammering son of Case 382 also married a niece, and had six children, of which one stammered, one was an idiot, and one malformed.

385. The one with the malformed spine of Case 382 also married a niece, and has only malformed children.[1]

386. A marriage between first-cousins, which produced over six children. Of these three are deaf-mutes, the fourth is healthy, and as for the rest the reporter, M. des Carrières, is ignorant as to their state of health.

387. A marriage between first-cousins, which produced two children. Of these the eldest suffered from hypospadias, situated near the root, and an ill-developed penis. He died at eighteen months of age. The other, a daughter, was quite healthy. The parents were quite healthy.

388. A marriage between first-cousins, which produced several children, boys and girls. Among the former one was malformed, and although this did not prevent him marrying he had no children. The father in this case was weakly and ill developed. The rest of the children were healthy.

389. A marriage between first-cousins, which produced at least two children. Both of these were idiots.

390. A marriage between first-cousins, which produced two children, one of which was congenitally blind, and one quite sound and healthy. Both the parents were healthy.

391. A marriage between first-cousins, which during the twenty-five years of its existence proved barren. The wife, however, died of cancer of the ovary.

392. A marriage between first-cousins, which produced two children. Of these one suffered from hydrocephalus, and died within twelve months after birth ; the other was healthy. Both parents were healthy.

393. A marriage between first-cousins, which produced one child, an imbecile girl.

394. A marriage between first-cousins, which produced one child, healthy and intelligent.[2]

[1] Cases Nos. 326 to 385 reported by M. Rodet ; see 'Note pour servir à l'Hist. des Mar. entre Consang.' in the *Congrès Médical de France*, 2nd session, held at Lyons, 1864, pp. 394 399. Paris 1865.

[2] Cases Nos. 386 to 394 reported by M. Dionis des Carrières ; see 'Note sur

395. A marriage between first-cousins, which produced three healthy children.

396. A marriage between first-cousins, which produced three healthy children.

397. A marriage between first-cousins, which produced four children. Of these one died of phthisis, and one of small-pox, the other two were healthy. In this case the mother died of phthisis.

398. A marriage between first-cousins, which only produced one child, as the mother died soon after its birth. The child was healthy.

399. A marriage between first-cousins, which produced six healthy children.

400. A marriage between first-cousins, which produced five children. Of these one died of phthisis, the others are healthy.

401. A marriage between first-cousins, which produced eleven healthy children.

402. A marriage between relatives which produced nine healthy children.

403. A marriage between first-cousins, which produced two healthy children. In this case the mother was a widow when she married, and not young.

404. A marriage between first-cousins, which produced three healthy children.

405. A marriage between first-cousins, which produced two healthy children.

406. A marriage between relatives, which produced eight children. Of these several were in bad health. The mother in this case and two of her brothers died of phthisis.

407. A marriage between first-cousins, which produced four healthy children.

408. A marriage between first-cousins, which produced eleven healthy children.

409. A marriage between first-cousins, which produced five healthy children.

410. A marriage between relatives, which produced nine children. Of these several were consumptive. The wife in this case was mad, and several of her relations were consumptive.

411. A marriage between relatives, which produced two healthy children.

412. A marriage between first-cousins, which produced three healthy children.

413. A marriage between first-cousins, which proved barren. The husband in this case, who was born of a German father and English mother, had married three times. His first union with a person not related to him had produced one son, who became mad. His second union, also with a person not related to him, proved barren like his third with his cousin.

la Variété des Difformités que produisent les Mariages Consanguins,' in the *Congrès Médical de France*, 2nd session, held at Lyons, 1864, pp. 443, 444. Paris, 1865.

414. A marriage between first-cousins, which produced seven healthy children.

415. A marriage between first-cousins, which produced three healthy children.

416. A marriage between first-cousins, which produced two healthy children.

417. A marriage between relatives, which produced six healthy children.

418. A marriage between first-cousins, which produced one healthy child. The parents separated a short time after marriage.

419. A marriage between relatives, which proved barren. In this case the husband's family suffered from poor health, and several members were barren.[1]

420. A marriage between second-cousins, which produced seven children. Of these the eldest was a congenital deaf-mute, and died at the age of seven of acute inflammation of the brain. The second, a girl, also a congenital deaf-mute, of poor intelligence, married a deaf-mute, and had five or six children, who all died young; the third, a boy, congenitally deaf-mute; the fourth, a boy, healthy and intelligent; the fifth, a deaf-mute; the sixth, healthy, and speaks; the seventh died at the age of six months of convulsions. The parents in this case were healthy, had no deaf-mutism in their family, but were of poor intelligence.

421. A marriage between first-cousins, which produced seven children, and one miscarriage. Of these one boy was womanish in form and voice. One girl died of phthisis at fourteen years of age. One boy is healthy and taller than ordinary. Another, a girl, is slightly lame, squints, and grew slowly. The fifth developed very slowly. The sixth died when two months old. There was a miscarriage of seven months caused by an acute illness of the mother. The last child died, aged eighteen months, of inflammation of the ganglions. The parents were healthy.

422. A marriage between uncle and niece, in which the husband was aged forty-six and the wife seventeen. One child only was born, and that had hydrocephalus. Both parents were healthy.

423. A marriage between first-cousins, which produced two children, of which one was healthy and the other a deaf-mute. The parents were healthy.

424. A marriage between first-cousins, which produced three children, who all died young. Both parents were healthy.[2]

425. A marriage between first-cousins, which produced three children. Of these one, now aged fifteen, had convulsions in infancy and suffers from nervous tic; the second, aged thirteen, also suffers from tic, and has an impediment in her speech; the third, aged eight, is of feeble constitution.

[1] Cases Nos. 395 to 419 reported by Dr. Anderson Smith, 'Des Mariages Consang.' in the *Congrès Médical de France*, 2nd session, held at Lyons, 1864, p. 447. Paris, 1865.

426. A marriage between first-cousins, which has produced two children, the eldest aged two years, and both are poorly.

427. A marriage between first-cousins, which produced three children. Of these the first weighed under one and a half pounds at birth, but developed like other children; a second had a dartrous affection; and the third suffered from inguinal hernia, but recovered. The father's mother was a deaf-mute. The mother's father was also a deaf-mute, and the mother suffered from chorea.

428. A marriage between first-cousins, which produced four children. Of these one had epilepsy when an infant, which was accounted for by his having cut sixteen teeth at the age of thirteen months. The three other children were quite healthy.

429. A marriage between first-cousins, which produced several miscarriages, several children who died young from brain affections, a child, now aged nineteen, who was subject in his youth to epileptiform vertigo, and is of feeble intelligence, and two healthy girls.

430. A marriage between first-cousins, which produced four children. Of these the eldest was lame in consequence of having had convulsions as an infant. The second married a stranger, her first child died young, and she is again pregnant. Another married a stranger, and has had five children, of which two died young, and the three others are poorly.

431. The fourth married a first-cousin and had one child, which they reared with difficulty. It had only three fingers on one hand.

432. A marriage between first-cousins, which produced one child, who was poorly and small.

433. A marriage between uncle and niece, which produced 'many' children and some miscarriages. Of these several died young, the remainder are feeble in intelligence, and one was club-footed.

434. A marriage between first-cousins, which produced seven children. Of these one was a deaf-mute, the rest were healthy. The parents were healthy.[1]

435. In a Protestant family on the îsle de Ré three brothers married three sisters, their first-cousins. To the first marriage five children were born, of which the eldest died from convulsions when ten months old; the second, a girl, is scrofulous; the third, a girl, died from convulsions at the age of eight months; the fourth, a girl, has an impediment in her speech; the fifth, a boy, is scrofulous, and slightly idiotic.

436. In the second marriage also five children were born. The eldest, a boy, is insane, scrofulous, and has an impediment in his speech. The second, a girl, articulates slowly. The third, a boy, is scrofulous and a deaf-mute; he married a person not related to him, and has two healthy children able to speak. The fourth, a boy, is a deaf-mute. The fifth, a girl, is healthy [1].

437. To the third marriage eight children were born. Of these the first was still-born. The second, a boy, was a deaf-mute; he married a person not related to him, and has a child able to speak. The third, a

[1] Cases Nos. 420 to 434 reported by Héliot, *Contr. à l'Étude de la Consanguinité*, Paris, 1875, pp. 51–55.

boy, was scrofulous, and died of hydrocephalus, aged three years. The fourth, a girl, is scrofulous, and could not speak before she was four years old. The fifth, a boy who died in convulsions at the age of twelve months, was thought to have been deaf. The sixth, a boy, is a deaf-mute. The seventh, a boy, was scrofulous, and died at the age of five years. The eighth, a boy, died at the age of ten months from convulsions, and was thought to have been deaf.[1]

438. A marriage between first-cousins, which produced three children, who were all scrofulous and died young.

439. A marriage between first-cousins, which produced two children, scrofulous in their youth, but the daughter lived till the age of forty-five, while the son, who became a sailor, lived to a greater age.

440. The brother of the husband in the last case also married his first-cousin. Six children were born to them, four boys and two girls. The boys were poorly when young, two died, who were almost idiots. The girls were quite healthy.

441. A marriage between first-cousins, which produced four children, all of them very scrofulous.

442. A marriage between first-cousins, which produced three children. One of these died of hydrocephalus, and the two others of the sequelæ of scrofulous glands.

443. A marriage between first-cousins, which produced two children, who were both scrofulous and died young.

444. A marriage between first-cousins, which produced three children, all scrofulous and rickety, but still living.[2]

445. A marriage between first-cousins, which produced five children. Of these the eldest died of convulsions at the age of seven months. The second has a cleft-palate. The third, aged seven years and a half, is healthy and intelligent. The fourth is microcephalous and suffers from convulsions. The fifth, aged about three years, also suffers from convulsions, and has not yet begun to speak. The parents were healthy.

446. A marriage between first-cousins, which produced four children. Of these two died in infancy; one, a deaf mute, rachitic and tuberculous, died at the age of eight years. The fourth, a girl, has an asymmetric cranium and face, and though intelligent is perverse and debauched. The father in this case is a confirmed drunkard; the mother, indolent, of small intelligence, and forgetful.

447. A marriage between uncle and niece, when the former was aged forty-five and the latter eighteen. Three children were born, of which one, who died when seven years old, was scrofulous and a deaf-mute. Another is half-imbecile, hysteric, passionate, and lisps. The third is very intelligent, but squints with both eyes.

448. A marriage between first-cousins, which produced two children. Of these the eldest at twenty-one years of age hanged himself after a

[1] Cases Nos. 435 to 437 reported by Ponsin; see Boudin, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 522, 523.

[2] Cases Nos. 438 to 444 reported by M. Ponsin; see Héliot, *Contribution à l'Étude de la Cons.* Paris, 1875, p. 57.

quarrel with his father. The other follows his father's occupation of a tailor; he is, however, a bad workman, stammers, is of small intelligence, and passionate. The grandfather of the parents in this case hanged himself.

449. A marriage between first-cousins, which produced three children, of which the first was club-footed, and died before the age of three months. The second squinted and died of bronchitis also before three months old. The third is epileptic, and is now aged three years. In this case the husband's father had hanged himself, and his mother was mad. The wife's mother was also mad, and she herself hysteric.

450. A marriage between first-cousins, which produced five children. Of these one was a deaf-mute, and suffered from chorea; two died of convulsions at seven months and four months of age; and two were healthy and intelligent, but one squinted, and the other had eleven fingers. The father in this case was a drunkard.

451. A marriage between first-cousins, which produced a healthy son.

452. The son in the last case married his first-cousin, and they had two children, who were both deaf-mutes. There was no illness among the relatives of the parents.

453. A case of incest between father and daughter, which produced an idiot infant.

454. A case of incest between father and daughter, which produced an epileptic and rickety boy.

455. A case of incest between father and daughter, which produced a child which died of hydrocephalus at five months of age. The father was a drunkard.

456. A case of incest between brother and sister, in which the latter was by about fifteen years the elder, and which produced an idiot infant.

457. A case of incest between mother and son, which produced a child which died of convulsions fifty-eight days after birth.[1]

458. A marriage between near blood relations, which produced twelve children, of which eight were healthy. Of the remaining four all were deaf-mutes, and suffered from bad and failing eyesight. In this case the father had bad sight, but was otherwise healthy, as were all his relatives, and also the mother and her relatives.[2]

459. A marriage between first-cousins, who were both healthy, which produced at least three children. Of these one, a boy, had cataract and retinitis pigmentosa, and also stammered slightly. The other two, his sisters, were, one of them deaf, and the other had retinitis pigmentosa like her brother.[3]

[1] Cases Nos. 445 to 457 reported by M. Legrand du Saulle; see Héliot, *Contrib. à l'Étude de la Consang.* Paris, 1875, pp. 62, 63, 67, 68.

[2] Case No. 458 reported by W. Tobin, 'Pigmentary Degeneration of the Retina,' in the *American Annals of the Deaf and Dumb*, edited by E. A. Fay, xxix. 178–185, No. 3, for July 1884.

[3] Case 459 reported by A. Picard, in the *Gazette Médicale de Paris*, 3rd series, 1868, No. 23, xxiii. 332, 333.

ANALYSIS OF THE ABOVE CASES.

Idiocy: Cases Nos. 1, 2, 4, 19, 22, 59, 105–124, 133, 157, 200, 210, 222, 225, 229, 232, 233, 236, 238, 241, 247, 249, 250, 252, 253, 371–374, 376, 378, 384, 389, 393, 435, 440, 447, 453, 456.

Insanity: Cases Nos. 22, 231, 249, 436.

Hydrocephalus: Cases Nos. 10, 23, 49, 111, 119, 121, 133, 134, 379, 392, 422, 437, 442, 455.

Meningitis: Cases Nos. 12, 22, 88, 326, 342, 380, 420.

Epilepsy: Cases Nos. 27, 30, 51, 52, 59, 102, 118, 127, 133, 158, 205, 211, 236, 253, 306, 380, 428, 429, 449, 454.

Chorea: Cases Nos. 3, 366, 425, 450.

Convulsions: Cases Nos. 21, 23, 29, 34, 50, 53, 106, 115, 118, 121, 270, 279, 367, 420, 425, 430, 435, 437, 445, 450, 457.

Squinting: Cases Nos. 421, 447, 449, 450.

Croup: Cases Nos. 29, 92, 94, 134, 269, 282, 285, 295, 297, 340, 367.

Whooping-cough: Cases Nos. 121, 124.

Paralysis: Cases Nos. 121, 157, 213, 242, 368.

Deaf-mutism: Cases Nos. 2, 5, 7, 8, 20, 22, 30–33, 35–48, 57, 58, 64, 68, 138, 139, 140, 170, 193, 210, 226, 230, 234–236, 238–240, 243, 244, 246, 369, 378, 386, 420, 423, 434, 436, 437, 446, 447, 450, 452, 458.

Mutism: Cases Nos. 121, 238, 241, 242, 244, 245, 247, 248, 306, 318.

Defective hearing: Cases Nos. 22, 34, 69, 88, 106, 214, 256, 370, 375, 437, 459.

Defective speech: Cases Nos. 7, 25, 49, 235, 250, 382, 383, 384, 425, 435, 436, 448, 459.

Blindness: Cases Nos. 66, 227, 229, 377, 390, 458.

Injuries to the eye: Cases Nos. 36, 221, 224, 229, 250, 304, 458, 459.

Goître: Case No. 126.

Crétinism: Cases Nos. 126, 127, 165, 208, 318.

Polydactylism: Cases Nos. 14, 56, 450.

Anencephalous: Case No. 13.

Want of cranial arch: Cases Nos. 15, 117.

Hermaphroditism: Case No. 228.

Hare-lip: Cases Nos. 13, 61–63, 65.

Cleft palate: Cases Nos. 61, 65, 250, 445.

Club-foot: Cases Nos. 13, 222, 229, 433, 449.

Lameness: Cases Nos. 22, 44, 250, 352, 421, 430.

Malformations in general: Cases Nos. 2, 3, 8, 13, 25, 26, 69, 117, 156, 161, 250, 304, 352, 378, 384, 385, 387, 388, 421, 431.

Rickets: Cases Nos. 3, 28, 151, 164, 196, 197, 200, 252, 306, 319, 320, 377, 444, 446, 454.

Spinal disease: Cases Nos. 24, 55, 66, 250, 260, 378, 382.

Dwarfing: Cases Nos. 30, 143, 144, 163, 199, 235, 250, 252.

Scrofula: Cases Nos. 25, 28, 30, 52, 136, 151, 152, 154, 159, 160, 163–165, 172, 196–199, 201, 203, 236, 250, 274, 304, 305, 315, 435, 436, 437, 438, 439, 441–444, 447.

Tuberculosis: Cases Nos. 21, 35, 83, 107, 108, 118, 119, 132, 133, 147, 160, 162, 179, 182, 274, 374, 397, 400, 410, 421, 446.

Albinoism: Cases Nos. 1, 9, 16–18, 165, 237.
Hæmorrhage: Case No. 29.
Psoriasis: Case No. 23.
Early death in the family: Cases Nos. 3, 8–12, 17, 18, 21–25, 29, 32, 35, 44, 50, 53, 54, 56, 61–65, 79, 82, 83, 91, 92, 94, 111, 115, 117–119, 121–124, 132–136, 142, 147, 155–157, 161, 167, 170, 178 180, 196, 199, 203, 212, 219–223, 235, 237, 258, 260, 266, 269, 270, 276, 282, 284, 285, 289, 295, 297, 305, 307, 310, 318, 320, 325, 326, 339–343, 345, 348, 350, 352, 353, 354, 358, 367, 378–380, 392, 421, 424, 435, 437, 438, 440, 443, 446, 449, 450, 455, 457.
Healthy children only in the family: Cases Nos. 6, 48, 70–73, 75, 76, 78, 80, 84, 85, 89, 90, 93, 95–98, 100, 103, 104, 130, 131, 141, 145, 146, 149, 150, 166, 171, 173–177, 181, 183–188, 190–192, 206, 207, 209, 215–218, 254, 255, 257, 261, 262, 264, 265, 267, 268, 271–273, 275–279, 281, 283, 286–288, 290–294, 296, 298, 299, 300–302, 309, 311, 312, 314, 316, 317, 322–324, 327–338, 344, 346, 347, 349, 351, 355–357, 359, 394–396, 398, 399, 401–405, 407–409, 411, 412, 414–418, 451.
In which deaf-mutes marry: Cases Nos. 7, 8, 69, 240, 420, 436.
Still-born: Cases Nos. 3, 13, 74, 117, 122, 153, 155, 189, 211, 270, 437.
Abortion: Cases Nos. 99, 117, 134, 155, 189, 201, 203, 209, 212–214, 262, 266, 268, 278, 293, 360, 381, 421, 429, 433.
Incest, cases of: Nos. 62, 179, 217, 453–457.
Marriages between uncle and niece, or aunt and nephew: Cases Nos. 20, 23, 27, 29, 34, 59, 61, 67, 70, 84, 85, 125, 126, 127, 141, 142, 143, 148, 170–173, 212–216, 320, 321, 326, 356, 361, 370, 373, 376, 383, 384, 385, 422, 433, 447.
Marriages between first-cousins born of cousins: Cases Nos. 91, 92, 95, 103, 104, 180, 239, 240, 251, 302, 304–307, 312, 322, 337, 357, 379, 431, 452.
Marriages between first-cousins: Cases Nos. 1, 3–14, 16, 17, 18, 22, 24, 25, 26, 30, 32, 35–39, 43–46, 49–58, 60, 63, 65, 66, 75, 76, 79, 81, 86, 87, 93, 94, 96–102, 105–108, 110, 113, 115–118, 120–124, 128–139, 144–147, 149–153, 155–168, 174–178, 181, 182, 193–211, 218–238, 242, 245, 249, 250, 252–258, 311, 314, 316, 319, 323, 324, 325, 327–336, 338–343, 359, 362–369, 371, 372, 374, 375, 377, 381, 382, 386–401, 403–405, 407, 408, 409, 412–416, 418, 421, 423–430, 432, 434–446, 448–451, 459.
Marriages between first-cousins once removed: Cases Nos. 48, 273, 300, 301, 303, 308, 309, 310, 313, 315, 317, 318, 344–355, 358, 360, 378, 380.
Marriages between second-cousins: Cases Nos. 15, 31, 40, 41, 42, 64, 71, 73, 74, 78, 89, 90, 109, 111, 114, 119, 154, 169, 183–188, 243, 244, 259–264, 267–272, 274–289, 420.
Marriages between more distant relatives: Cases Nos. 33, 47, 69, 72, 77, 80, 82, 83, 88, 112, 140, 189–192, 241, 248, 265, 266, 290–299.
In which the children of cousins marry persons not related to them: Cases Nos. 2, 7, 8, 25, 48, 49, 68, 93, 102, 179, 240, 246, 247, 249, 250, 252, 253, 267, 284, 300, 316, 345, 354, 382, 388, 420, 430, 436.
In which there is a double marriage of the same person, one consanguineous and one not: Cases Nos. 18, 55, 56, 60, 98, 109, 195, 243, 313, 370, 413.
Marriages between persons not related: Cases Nos. 12, 18, 25, 55, 56, 60, 98, 109, 195, 243, 313, 370, 413.
In which the relationship is not stated: Cases Nos. 19, 21, 28, 402, 406, 410, 411, 417, 419, 458.

Number of Children Born to each Marriage.[1]

No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births
1	2 ∞	55	2	109	4	163	2 ∞	217	2 ∞	271	1
2	4	56	2	110	6	164	2 ∞	218	2 ∞	272	4
3	several	57	2	111	6 ∞	165	3 ∞	219	2 ∞	273	4
4	2	58	3 ∞	112	11	166	2 ∞	220	7	274	4
5	8	59	4	113	6	167	1	221	3	275	5
6	3	60	0	114	6	168	0	222	2	276	19
7	5	61	2	115	11	169	0	223	2 ∞	277	2 ∞
8	4	62	7	116	12	170	3 ∞	224	2 ∞	278	12
9	1 ∞	63	3	117	10	171	2 ∞	225	2 ∞	279	7
10	11	64	5	118	6	172	many	226	2 ∞	280	0
11	8	65	4	119	7	173	2 ∞	227	2 ∞	281	2
12	5	66	3	120	4	174	many	228	3 ∞	282	4
13	1 ∞	67	2	121	6	175	2 ∞	229	7 ∞	283	2 ∞
14	1 ∞	68	1 ∞	122	2	176	2 ∞	230	10	284	5
15	1 ∞	69	2	123	5	177	2 ∞	231	8	285	1
16	1 ∞	70	2	124	5	178	2 ∞	232	8	286	3
17	2	71	1	125	0	179	6	233	5	287	1
18	5	72	2	126	3 ∞	180	6	234	several	288	1 ∞
19	2	73	4	127	2 ∞	181	2 ∞	235	6 ∞	289	1
20	2 ∞	74	1	128	0	182	3	236	4	290	4
21	14	75	2 ∞	129	0	183	2 ∞	237	4	291	4
22	8	76	1 ∞	130	2 ∞	184	2 ∞	238	2 ∞	292	2 ∞
23	8	77	1	131	2 ∞	185	2 ∞	239	2 ∞	293	7
24	10	78	1 ∞	132	6 ∞	186	2 ∞	240	5 ∞	294	1
25	7	79	2	133	5	187	2 ∞	241	8	295	3 ∞
26	2	80	1	134	11	188	2 ∞	242	2 ∞	296	1 ∞
27	1	81	0	135	12	189	6 ∞	243	5	297	6
28	6	82	4	136	13 ∞	190	2 ∞	244	8	298	1 ∞
29	1	83	2	137	0	191	2 ∞	245	1 ∞	299	1 ∞
30	4	84	2	138	2 ∞	192	2 ∞	246	2 ∞	300	7
31	2 ∞	85	2 ∞	139	4 ∞	193	3	247	1 ∞	301	20
32	2 ∞	86	1	140	2 ∞	194	0	248	1 ∞	302	6
33	3	87	2	141	2 ∞	195	0	249	5	303	0
34	1	88	2	142	3	196	6	250	9	304	5
35	7	89	3	143	2 ∞	197	many	251	0	305	12
36	4	90	7	144	2 ∞	198	2 ∞	252	5	306	5
37	2 ∞	91	7	145	1	199	5	253	several	307	9
38	2	92	3 ∞	146	2 ∞	200	4	254	6	308	0
39	8	93	3	147	6 ∞	201	3	255	4	309	8
40	2	94	7	148	0	202	0	256	4	310	7
41	3	95	2 ∞	149	2 ∞	203	5	257	3 ∞	311	10
42	2	96	3 ∞	150	2 ∞	204	0	258	6	312	3
43	2	97	8	151	3 ∞	205	3	259	3	313	0
44	2	98	1 ∞	152	2 ∞	206	2 ∞	260	5	314	4
45	4	99	3	153	2	207	2 ∞	261	1 ∞	315	several
46	5	100	5	154	2 ∞	208	2	262	7 ∞	316	2
47	4	101	0	155	8	209	4 ∞	263	0	317	3
48	2	102	5	156	10	210	many	264	6	318	12
49	1	103	2 ∞	157	10	211	3 ∞	265	2	319	2
50	3	104	3 ∞	158	2 ∞	212	10	266	9	320	4
51	1	105	4	159	2 ∞	213	11	267	3	321	0
52	2	106	2 ∞	160	2 ∞	214	7	268	4	322	1
53	4	107	8 ∞	161	2 ∞	215	5 ∞	269	3	323	1
54	1	108	6	162	4 ∞	216	2 ∞	270	5	324	2

[1] Each sign of fertility, such as an abortion, is put down ; and the sign ∞ shows that probably more children were born than are reported in that case.

Number of Children Born to each Marriage—(continued).

No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births	No. of Case	No. of Births
325	3 ∞	348	3	371	5	394	1	417	6	440	6
326	7	349	3	372	5	395	3	418	1	441	4
327	5	350	3	373	5	396	3	419	0	442	3
328	3	351	2	374	5	397	4	420	7	443	2
329	3	352	7	375	5	398	1	421	8	444	3
330	3	353	4	376	2	399	6	422	1	445	5
331	several	354	3	377	2	400	5	423	2	446	4
332	,,	355	6	378	10	401	11	424	3	447	3
333	7	356	1	379	3	402	9	425	3	448	2
334	3	357	1	380	4	403	2	426	2	449	3
335	several	358	3	381	2	404	3	427	3	450	5
336	,,	359	1	382	10	405	2	428	4	451	1
337	3	360	1	383	2	406	8	429	5 ∞	452	2
338	4	361	0	384	6	407	4	430	4	453	1
339	2	362	0	385	several	408	11	431	1	454	1
340	3	363	0	386	7 ∞	409	5	432	1	455	1
341	4	364	0	387	2	410	9	433	many	456	1
342	4	365	0	388	several	411	2	434	7	457	1
343	8	366	3	389	2 ∞	412	3	435	5	458	12
344	4	367	6	390	2	413	0	436	5	459	3 ∞
345	8	368	several	391	0	414	7	437	8		
346	3	369	3	392	2	415	3	438	3		
347	4	370	2	393	1	416	2	439	2		

Cases No.	Reported by
1 to 4	Balley
5	Brochard
6 ,, 8	De Ranse
9	Aubé
10 ,, 21	Devay
22	Forestier
23	Potton
24 ,, 25	Viennois
26 ,, 27	Bondet
28	Teissier
29	Doyon
30 ,, 48	Chazarain
49 ,, 56	Chipault
57	Duteval
58 ,, 59	Trousseau
60	Lisle
61	Potier-Duplessy
62 ,, 65	Rizet
66	Robillard
67	Peter
68	de la Charrière
70 ,, 92	Bourgeois
93 ,, 96	Devic
97	Livy
98 ,, 99	Defert
100	Dally
101 ,, 104	Ancelon
105 ,, 124	Down
125 ,, 142	Lombroso
143 to 147	Sargenti
148 ,, 154	Moretti
155 ,, 156	Longhi
157 ,, 158	De Orchi
159 ,, 170	Demeva
171 ,, 179	Roboletti
180 ,, 192	Liberali
193	Bizzozero
194 ,, 197	Zaniboni
198 ,, 215	Mantegazza
216 ,, 217	Turck
218	Dobell
219 ,, 233	Brooks
234 ,, 235	Perron
236	Carpenter
237	Goux
238 ,, 248	Reported in the Irish Census for 1871
249 ,, 253	Mitchell
254 ,, 299	Voisin
300 ,, 325	Poncet
326 ,, 385	Rodet
386 ,, 394	des Carrières
395 ,, 419	Anderson Smith
420 ,, 434	Héliot
435 ,, 444	Ponsin
445 ,, 457	Legrand
458	Tobin
459	Picard

M. Hervier says that he knew of twenty consanguineous marriages among the population of Rive-de-Gier, a town of 15,000 inhabitants, which were all of them without any bad results. Among the rest of the population he met with twenty-three cases of sterility, twelve of deaf-mutism, and three of polydactylism, all derived from marriages between persons who were not related.[1]

Dr. Bemiss gives an account of 833 marriages between relations, which need not here be given in full, as the account is not difficult to get at,[2] and it would take up a great deal of space. The results, however, are given in the following table —:[3]

Classes of Relationship	Number of Observations	Average Number of Births	Per Cent.								
			Defective	Deaf-mutes	Blind	Idiots	Insane	Epileptic	Scrofulous	Deformed	Died Young
A. Incest with parent, or between brother and sister . .	10	3·1	93·5	—	—	61·2	—	3·2	16·1	35·4	—
B. Marriage with niece or aunt	12	4·42	75·4	1·9	5·6	5·6	1·9	1·9	20·7	26·4	43·3
C. Marriages between blood relations, the issue of blood relations	56	4·18	53·8	4·2	5·1	12·8	1·2	1·7	18·8	3·8	26·9
D. Marriages between double first-cousins	27	5·7	27·2	1·2	1·2	2·5	3·8	1·2	6·3	1·2	35·0
E. Marriages between first-cousins	580	4·8	24·9	4·2	2·2	8·3	—	1·6	6·2	1·9	22·5
F. Marriages between second-cousins	112	4·58	13·0	1·7	—	3·3	—	1·1	2·9	1·7	16·5
G. Marriages between third-cousins	12	4·92	27·0	5·0	—	1·7	1·7	3·4	16·9	—	13·5
H. Marriages between first-cousins, irregularly reported .	24	5·0	17·5	2·5	—	2·5	1·6	—	12·5	—	10·0
Total . . .	833	4·6	28·7	3·6	2·1	7·0	2·04	1·5	7·6	2·4	22·4
Marriages between persons in no way related . . .	125	6·7	2·1	0·35	0·1	0·71	0·1	0·35	0·1	—	16·0

This 'table of aggregates,' as Dr. Bemiss calls it, does not include all the cases he gives ; for these are 873, producing 4,124 children, while the table only gives 833, producing 3,942 children. I have besides noticed that the averages of births are not quite correct, especially in Class A, but have amended this in my copy of the table.[4] Of course these results are

[1] Hervier, 'Des Mariages Consanguins,' in the *Congrès Médical de France*, 2nd session, 1864. Paris, 1865, pp. 390, 391.

[2] Bemiss, 'Report on Influence of Marriages of Consanguinity upon Offspring,' *Trans. of the Amer. Med. Assoc.* 1858, xi. 334-419.

[3] *Ibid.* pp. 420-423 ; but I have condensed it slightly.

[4] M. Devay is incorrect, as usual, in referring to these statistics. He says 873 marriages between relations produced 3,900 children, whereas they produced 4,124. These 873 marriages, he says, were contracted in the State of Ohio, whereas they were spread over twenty-five different States. As we have already seen, he falsely asserts that marriages between first-cousins are prohibited (see p. 138 of this work), and, as we shall see directly, is guilty of further carelessness (Devay, *Du Danger*, etc. pp. 141, 142).

open to the objections already given ; Dr. Bemiss himself says, ' It is natural for contributors to overlook many of the more fortunate results of family intermarriage, and furnish those followed by defective offspring or sterility.'[1] M. Boudin quotes the above statistics of Dr. Bemiss, but without giving any authority, and because he did not copy them firsthand he has given them wrongly.[2] He must, indeed, have obtained them from the ' Annales d'Hygiène,'[3] but he has contrived to make the further blunder of attributing their collection to Mr. Morris, whereas Professor O. W. Morris appears only to have been President of the American Medical Association, who appointed a committee to enquire into the subject.[4] If M. Boudin had enquired a little further he would have found that the ' Annales d'Hygiène ' obtained its information from Ranking's ' Abstracts,'[5] which, oddly enough, took its information from the ' Dublin Hospital Gazette,' which got its information from the ' Art Médical,'[6] which reprinted it from the ' Nouvelliste de Rouen.'[7] But M. Boudin did not look any further, and, disdaining alike the doubts of Dally and the notice of his authority, reprints his statement intact in the ' Mém. de la Soc. d'Anthropologie.'[8]

In another article Dr. Bemiss says of 34 marriages between relations which he examined, 7, or 20·5 per cent., proved barren. The remaining 27 marriages produced 192 children,[9] or 5·6 children per marriage, barren and fertile. Of these 192 children 58 died young, from causes which were given in 24 cases, to wit : 15 from consumption, 8 from ' spasmodic affections,' and 1 from hydrocephalus. Of the remaining 134, 46 were healthy, 32 are said to be ' deteriorated, but without absolute indications of disease,' of 9 nothing is stated, while of the remaining 47, 23 were scrofulous, 4 were epileptic, 2 were insane, 2 were deformed, 4 were idiots, 2 were dumb, 2 were blind, 6 had defective sight, 5 were albinoes, and 1 suffered from chorea. These make together 51 cases, but Dr. Bemiss says they were only 47 : hence several must have been affected with one or more of these diseases.[10]

Dr. Howe obtained from Massachusetts statistical tables containing 17 cases of consanguineous marriage. ' Most of the parents were intemperate or scrofulous ; some were both the one and the other.' These marriages produced 95 children, or about 5·5 per marriage ; 44 were

[1] Bemiss, ' Report on Influence of Marriages of Consanguinity upon Offspring,' *Trans. of the Amer. Med. Assoc.* 1858, xi. 323.

[2] Boudin, *Ann. d'Hygiène*, 1862, xviii. 13, where he says *Morris* obtained 883 returns of marriages between relations, which produced 4,013 children !

[3] *Annales d'Hygiène*, 1862, xvii. 227.

[4] *Ibid.* ; and Bemiss, *ut sup.* p. 322 ; and Ranking's *Abstracts*, 1861, xxxiii. 12.

[5] Ranking's *Half-yearly Abstract of the Med. Sciences*, 1859, xxix. 10.

[6] December 1, 1858. [7] Ranking, *ut sup.* 1859, xxix. 10.

[8] *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 511.

[9] In the *Journal of Psych., Med., and Mental Path.* for April 1857, vol. x. p. 369, it makes this number 191, and on the following page 192. I do not know whether this mistake occurs also in the *North Amer. Med.-Chir. Review*, for January 1857, from which this article is taken ; but it is copied with great exactitude by M. Devay (*Du Danger*, etc. pp. 140, 141).

[10] Bemiss, *Journal of Psych., Med., and Mental Path.* 1857, x. 369, 370.

idiots, or nearly 50 per cent.; 12 were scrofulous or puny, 1 was deaf, and 1 was a dwarf.[1] In some cases all the children were very scrofulous and puny, and in one case, out of a family of eight children, 5 were idiots.[2]

Dr. Mitchell collected 45 cases of consanguineous marriage, of which 8 were either virtually or actually barren. The 37 fertile marriages produced 146 children, or an average of about 4 per fertile marriage, and about 3 for all the marriages, barren and fertile. Of these children—

8,	or 5·5	per cent.,	were idiots.
5 ,,	3·4	,,	,, imbecile.
11 ,,	7·5	,,	,, insane.
2 ,,	1·4	,,	,, epileptic.
4 ,,	3·0	,,	,, paralytic.
2 ,,	1·4	,,	,, deaf-mutes.
3 ,,	2·0	,,	,, blind (congenital?)
2 ,,	1·4	,,	,, 'defective' in vision.
3,	or 2·0	per cent.,	were deformed (spinal, etc.)
6 ,,	4·1	,,	,, lame.
1 ,,	0·7	,,	was rachitic.
22 ,,	15·0	,,	were consumptive, scrofulous, or manifestly of weak constitution.

In 8 cases none of the above diseases or defects appeared among the children; and therefore 29, or 64·5 per cent., of all the marriages produced children who were affected in some way injuriously. Dr. Mitchell, however, adds that, though his notes show a total of only 146 children born, there were probably many more, since some of the marriages were very prolific.[3]

M. Cadiot collected 54 cases of marriages between persons related in the third or fourth canonical degree with this result :—

	No.	Per Cent.
Barren	14	25·9
Marriages producing children who were scrofulous, rachitic, idiots, or deaf-mutes	18	33·4
Marriages which produced children who all died before reaching adult age	7	13·0
Marriages which produced healthy children	15	28·0[4]

M. Ancelon, however, as a complement to the above statement, gives the results of an enquiry into the whole population of Dieuze, a town of some 3,700 persons, composed of 800 families. The *non-consanguineous* marriages gave the following results :—

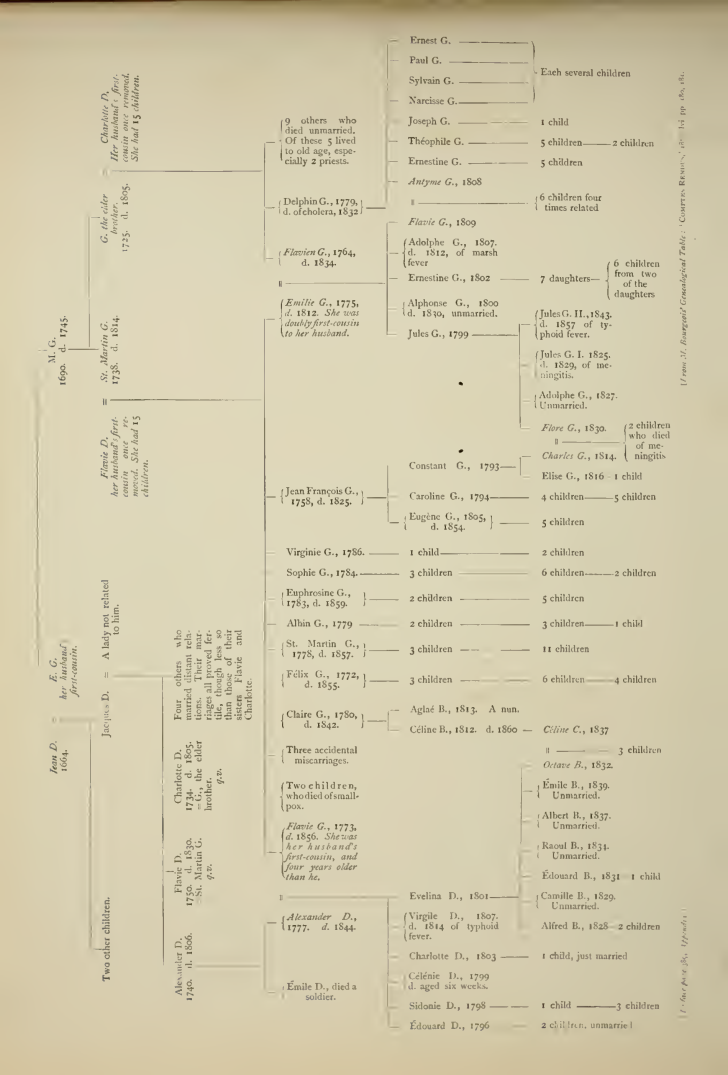
	Per Cent
Barren	7·50
Marriages producing children who were scrofulous, rachitic, consumptive, idiots, or deaf-mutes	47·33
Marriages producing children who all died before reaching adult age	0·69
Marriages which produced healthy children	44·93

[1] M. Devay says: '44 sont idiots et 14 scrofuleux,' ignoring the classification of Dr. Howe (*Du Danger*, etc. p. 142).

[2] Howe, 'On the Causes of Idiocy,' in the *Journal of Psych., Med., and Mental Path.* July 1858, pp. 393, 394.

[3] Mitchell, *Mem. read before the Anthrop. Soc. of London*, 1866, ii. 403.

[4] Cadiot, *Comptes Rendus*, 1863, lvii. 978.


Jean D. 1664.
E. G. her husband first-cousin.
M. G. 1690. d. 1745
Two other children.
Jacques D. = A lady not related to him.
Four others who married distant relations. Their marriages all fruitful for life, though less so than those of their sisters Flavie and Charlotte.
Alexander D. 1740. d. 1806.
Flavie D. 1750. d. 1830. St. Martin G. 9to.
Charlotte D. 1734. d. 1805. G., the elder brother. 9to.
St. Martin G. 1738. d. 1814
Flavie D., her husband's first-cousin once removed. She had 15 children.
G. the elder brother. 1725. d. 1805.
Charlotte D., Her husband's first-cousin once removed. She had 15 children.
Ernest G.
Paul G.
Sylvain G.
Narcisse G.
Each several children
Joseph G. — 1 child
Théophile G. — 5 children — 2 children
Ernestine G. — 5 children
Antyme G., 1808
6 children four times related
9 others who died unmarried. Of these 5 lived to old age, especially 2 priests.
Delphin G., 1779, d. of cholera, 1832
Flavien G., 1764, d. 1834.
Flavie G., 1809
Adolphe G., 1807. d. 1812, of marsh fever
Ernestine G., 1802 — 7 daughters — 6 children from two of the daughters
Emilie G., 1775, d. 1812. She was double first-cousin to her husband.
Alphonse G., 1800 d. 1839, unmarried.
Jules G., 1799
Jules G. II., 1843. d. 1857 of typhoid fever.
Jules G. I. 1825. d. 1829, of meningitis.
Adolphe G., 1827. Unmarried.
Flore G., 1830. — 2 children who died of meningitis
Charles G., 1814. — 2 children
Elise G., 1816 — 1 child
Constant G., 1793
Jean François G., 1758, d. 1825.
Caroline G., 1794 — 4 children — 5 children
Eugène G., 1805, d. 1854. — 5 children
Virginie G., 1786. — 1 child — 2 children
Sophie G., 1784. — 3 children — 6 children — 2 children
Euphrosine G., 1783, d. 1859. — 2 children — 5 children
Albin G., 1779 — 2 children — 3 children — 1 child
St. Martin G., 1778, d. 1857. — 3 children — 11 children
Félix G., 1772, d. 1855. — 3 children — 6 children — 4 children
Aglaé B., 1813. A nun.
Céline B., 1812. d. 1860 — Céline C., 1837
Claire G., 1780, d. 1842.
3 children
Octave B., 1832.
Three accidental miscarriages.
Two children, who died of small-pox.
Flavie G., 1773, d. 1856. She was her husband's first-cousin, and four years older than he.
Émile B., 1839. Unmarried.
Albert B., 1837. Unmarried.
Raoul B., 1834. Unmarried.
Édouard B., 1831 — 1 child
Camille B., 1829. Unmarried.
Evelina D., 1801
Alexander D., 1777. d. 1844.
Virgile D., 1807. d. 1814 of typhoid fever.
Alfred B., 1828 — 2 children
Charlotte D., 1803 — 1 child, just married
Émile D., died a soldier.
Célénie D., 1799 d. aged six weeks.
Sidonie D., 1798 — 1 child — 3 children
Édouard D., 1796 — 2 children, unmarried

Verso St. Bauguet's Genealogical Table.' Compte Rendu, 1861, pp. 180, 181.

Verso page 180, upwards.

There were only four consanguineous marriages, which are given above, Cases Nos. 101 to 104.[1]

Of 13 cases collected by M. Devay 8 were barren, 4 produced scrofulous children, who all died before they had attained their fourteenth year, and 1 produced a child afflicted with ichthyosis. Of another set of 26 cases he collected, 11 turned out unfortunately: 1 produced an epileptic child, 3 others produced children who died of hydrocephalus or convulsions, 2 were barren, and 5 'produced *two* children whose state of health left much to be desired'; 4 only produced healthy offspring. To these observations M. Devay adds 82 more, which 'offer much analogy to the preceding ones.' Of these 14, he says, were barren, 'which makes with the *eight* mentioned above, in all 22.' Of these 22 cases of sterility, he continues, 16 were absolutely sterile, and in six there were miscarriages, but the marriages remained barren; and out of the whole 121 cases of consanguineous marriage he found 17 cases in which there had been miscarriages, of which 11 were preceded or succeeded by births. In the 82 cases there was another example of ichthyosis.[2]

Of 19 cases recorded of marriages between relatives by M. Courtans, from Upper Savoy, 6 idiots were born, 5 imbeciles, and 6 rachitic children.[3]

Dr. Viennois found that among 6 marriages of persons related to each other, 1 was barren, and the 5 fertile unions produced 14 children, or an average of 2·8 children per marriage. Of these 1 was an idiot, 2 were blind, 3 were lame, and 1 had hydrocephalus, or, rather, there was a disproportion between the head and body.[4]

M. Dally reports a case of continual intermarriage between two families. These marriages never took place in a nearer degree than first-cousins, except in two instances, where the daughter of first-cousins has married her uncle. This has continued for five generations, and the mean number of children per marriage was 3 or 4. The total number of descendants, direct and collateral, is 120 to 140, and this in spite of the fact that many members of the family remained unmarried. There has not been a single case of idiocy or deaf-mutism; but there were two deaths from consumption, caused in the one case by a cold, and the other from no appreciable cause; and 1 case of senile insanity in a female aged 68, who died three years after. There was no predisposition to disease manifested in the family, except perhaps to rheumatism, and that was limited to a few individuals.[5]

M. Bourgeois gives a genealogical table from his own family, in which, in the course of five generations, there were more than eight consanguineous marriages. Only one of these marriages proved barren, and that was not a marriage of consanguinity: in this case the fault probably lay with the wife, who was no relation; the husband was the offspring of cousins three generations higher up. Of all the eight consanguineous

[1] Ancelon, *Comptes Rendus*, 1864, lviii. 166, 167.
[2] Devay, *Du Danger*, etc. pp. 89, 90, 93, 104.
[3] Mantegazza, *Studj sui Matrim. Cons.* p. 20.
[4] Devay, *Un Mot sur le Danger des Mar. Cons.* p. 30.
[5] Dally, *Recherches*, etc. p. 51.

[To face page 380, Appendix.]

lvi. pp. 180, 181

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[2] Devay, *Du Danger*, etc. pp. 89, 90, 93, 104.
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[4] Devay, *Un Mot sur le Danger des Mar. Cons.* p. 30.
[5] Dally, *Recherches*, etc. p. 51.

marriages here given, only the grandchildren and great-grandchildren of Flavien and Emilie G. are at all scrofulous ; all the others are healthy. The last generation is as yet incomplete.[1]

M. Seguin gives the results of ten consanguineous marriages which have occurred in his own family. These give an average of 6·1 children per marriage, of which the average life was 30 years. One of these marriages was barren, which makes the fertile marriages average 6·8 children per marriage. There was not a single case of deaf-mutism, hydrocephalus, impediment of speech, or supernumerary fingers or toes among all these children, and this notwithstanding that the relationship of the parents was very close and complicated, as may be seen from the following table :—[2]

	Degree of the Relationship of the Parents	Date of the Parents' Marriage	Total Number of Children	Number of Children Living 1863	Sum of Years of the Children's Ages up to 1863
I. Jean Baptiste de Montgolfier, married Méranie de Montgolfier .	First-cousins	1805	10	7	520
II. Élie de Montgolfier, married Pauline Duret, daughter of Jeanne de Montgolfier . .	,,	1812	9	8	320
III. Raymond, son of Élie de Montgolfier, married Julie Seguin, daughter of Augustine, who was the daughter of Jeanne de Montgolfier	,,	1840	5	3	55
IV. Laurent, son of Élie de Montgolfier, married Hélène Seguin, daughter of Augustine, daughter of Jeanne de Montgolfier	,,	1840	3	2	40
V. Eugène de Montgolfier, married Jenny de Montgolfier .	,,	1845	5	5	55
VI. Marc Seguin, married Augustine, daughter of Jeanne de Montgolfier	,,	1813	13	5	450
VII. The same, married a second time to Augustine, daughter of Élie de Montgolfier . .	Uncle and niece	1838	6	6	70
VIII. Camille Seguin, married Célie, daughter of Jeanne Seguin	First-cousins	1814	8	8	320
IX. Paul Seguin, married Thérèse, daughter of Camille Seguin	Uncle and niece	1840	2	2	15
X. Joseph Seguin, married Marie, daughter of Lydie de Montgolfier	First-cousins	1858	0	0	0

[1] Bourgeois, *Comptes Rendus*, 1863, lvi. 180, 181; and *Quelle est l'Influence*, etc. Thèse No. 91, Paris, 1859, pp. 27, 28.

[2] Seguin, *Comptes Rendus*, 1863, lvii. 253, 254.

Mr. Power says that from five marriages between first-cousins among his own immediate relations 33 children were born, or 6·6 per marriage. Of these 8 died young, or 24·3 per cent. ; 1 from teething, 2 from croup, and one from whooping-cough (all injudiciously fed), 1 from accident, 1 from cyanosis, and 2 from well marked scrofulous disease. The last two deaths occurred in the same family, and were the only offspring of an extremely obese father and a highly scrofulous mother. The surviving children are of an unusually fine and healthy growth.[1]

M. Périer says that for some years he has noted down every case of consanguineous marriage which he has heard of. These cases now, he says, amount to 26 ; for the most part between second-cousins, and generally among the well-to-do class, and where the parents are in good health ; nor was there among the whole 26 a single case of misadventure, fairly attributable to consanguinity and isolated from every other cause.[2]

Mr. Lathrop, in answer to his inquiries, received returns as to 25 marriages between 'near relations,' which produced 107 children, or an average of 4·28 per marriage. Of these 4 were insane and 11 idiots : but 9 out of the 15 whose minds were unsound became so from known causes other than consanguinity, leaving 6 only, or 5·6 per cent., not specially accounted for.[3]

[1] Carpenter's *Human Physiology*, 1869, p. 863, note.
[2] Périer, *Mém. de la Soc. d'Anthrop. de Paris*, 1863, i. 236.
[3] Lathrop, *Boston Med. and Surg. Journ.* c. 837.

BIBLIOGRAPHY

OF

WORKS ON THE IMPEDIMENTS TO MARRIAGE.

IN this bibliography I have endeavoured to collect everything that has been written upon the impediments to marriage, exclusively of general works on marriage and newspaper articles. It is therefore, I venture to think, the most comprehensive bibliography that has ever been attempted upon any subject, and upon this score, and considering the extreme difficulty of collecting journalistic articles, pamphlets that perish without leaving a trace behind, and a class of works usually passed over by all bibliographies, I trust I may be fairly excused the inevitable imperfections.

I have divided it under the following heads :—

I. The Development of Marriage Law.
II. Works upon Relationship.
III. Christian Impediments to Marriage.
IV. Henry VIII.'s Divorce.
V. Marriages of Affinity.
VI. Consanguineous Marriage physiologically considered.

The arrangement is chronological, with a further sub-arrangement alphabetically under the author's names for those works published in the same year. To the whole I have added an alphabetical index to the author's names.

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De Castis Incestisve Nvptiis Disputatio: in qua de Sponsalibvs et Matrimonio ex Ivre civili Pontificio & Orientali disseritur. Itemque de gradibus et nominibus cognatorum et adfinium. Opvs Postvmvm: cui adiectus est eiusdem Hotmanni libellus de Spvriis & Legitimatione. By **Franciscus Hotmannus.** 12mo. Lyons, 1594; 8vo. Frankfurt, 1619; and in his *Opera*: 3 vols. fol. Geneva, 1599–1600.

On the Marriage of Cousin Germans. By **Charles Butler.** Oxford, 1619 (and 1629 ?). 1619

In Latin: ΣΥΓΓΕΝΕΙΑ. De Propinqvitate Matrimonium impediente Regvla. Quæ vna omnes quæstionis huius difficultates facilè expediat. 4to. Oxford, 1625 ; 8vo. Frankfurt, 1643.

This last edition is printed with, and following, Floren's Tract. See below (1643).

Matrimonii Impedimenta: Quæ in Catholica celebri Vniversitate Dilingana. . . . Proposvit Reverendus. . . . **Avgvstinvs Hochneker.** 4to. Dillingen, 1621. 1621

1643 **Francisci Florentis** Antecessoris Aurelianensis Tractatus de Nvptiis Consobrinarum prohibitis aut permissis. 8vo. Frankfurt, 1643.
This work has a title common to itself and Butler (*see* supra, 1625). *Butler, who follows, has a separate title.*

1646 **Joannis Seldeni** Uxor Ebraica, Seu de Nuptiis a Divortiis Ex Jure Civili, id est, Divino & Talmudico, Veterum Ebræorum, Libri Tres, &c. 4to. London, 1646.
Especially Cap. XIII. Other Editions: 4to. Frankfurt, 1673. *Ibid.* 1695.

1660 'The Judicial law of Moses is annul'd, or abrogated, and retains no obliging power either in whole or in part over any Christian Prince, Commonwealth, or Person.' In the Ductor Dubitantium, or the Rule of Conscience in all her General Measures. By **Jeremy Taylor.** Rule iii. chap. ii. book 2. Fol. London, 1660, 1671, 1676, 1696, 1716.

1667 Impedimentis Matrimonii Disputatis Theoretico-Practica . . . Publico . . . **Johannes Fridericus Horn.** . . . Jena. 4to. 1667.

1673 The Marriages of Cousin Germans Vindicated from the Censures of Unlawfullnesse, and Inexpediency. [By **Samuel Dugard.**] Sm. 8vo. Oxford, 1673.
Printed anonymously. There are probably other editions, 1675 *and* 1680.

'Concerning the Lawfulness of Marriages betwixt First Cousins, or Cousin-Germans.' In the Golden Remains of the ever-memorable Mr. **John Hales.** London, 1673. 4to. And 1688. 8vo.
Also in the Collected Works. Glasgow, 1765. 3 *vols.* 8*vo. It is not contained in the first edition of* 1659.

——— Incestuous Marriages, or Relations of Consanguinity and Affinity hindering and dissolving Marriage, as making all Marriages within such Relations to be Incestuous, and all Children begotten of such Marriages to be Illegitimate, or Bastards to all intents and purposes. By **H[enry] C[ompton]**, Bishop of London. (*A broadside.*) $167\frac{7}{8}$.

1682 Mr. Emmerton's Marriage with Mrs. Bridget Hyde Considered. Wherein is discoursed . . . The Levitical Degrees, the Bounds of a Legal Marriage, and the Reasons thereof. In a Letter from a Gentleman in the Country, etc. . . Published by Richard Baldwin. 4to. London, 1682.

Mr. Emmerton's Cause now depending before the Delegates, briefly stated and unfolded. Printed for R. Dew. Fol. London, 1682.

——— Two Discourses Introductory to a Disquisition Demonstrating the Unlawfulness of the Marriage of Cousin Germans: From Law, Reason, Scripture, and Antiquity. By **John Turner.** 8vo. London, 1682.

I. N. D. N. J. C. Dissertatio, Legis Connubii, Quæ Levit. xviii. v. 11. Ex Gentium Jure refertur, Genuinum Sensum exquirens; Ex conatibus **Gothofredi Valandi** in Electorali Brandenb. ad Viadrum Profess. Ordin. 4to. Francofurti ad Viadrum, 1682.

Dissertatio de coitu damnato. By **J. V. Bechmann.** 4to. Jena, 1684. 1684

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An Argument in Defence of the Marriage of an Uncle with the Daughter of his Half-Brother by the Father's Side. By **John Turner.** 4to. London, 1686. 1686

Johannis Meyeri. . . . Uxor Christiana sive de Conjugio inter Duos deque Incestu et Divortiis, Dissertationes Tres . . . 4to. Amsteladami, 1688. 1688

Traité pacifique des Empêchments du mariage. By **Gerbois.** Paris, 1690. 1690

Degrees of Marriage; or, an admonition to all such as shall intend hereafter to enter into the State of Matrimony Godly and agreeably to the Laws. By **Matthew Parker,** Archbishop of Canterbury. Fol. (*A Broadside.*) London, 1696. 1696

Dissertatio de dispensatione circa matrimonia inter grados prohibitos. By **George Beyer.** [*Circa* 1710.] 1710

De incestis cum noverca matre nuptiis. By **Michael Heinrich Gribner.** [*Circa* 1715.] 1715

De Dispensatione matrimoniali. By **Schultz.** 4to. 1718. 1718

A Discourse Briefly shewing that the marriages of Such as are Near of Kin are Sinful and Abominable now Vnder the Gospel, As well as they were Vnder the Law: And that All the Degrees of Kindred, contain'd in the Table appointed to be put up in Churches (which Table is here printed at large) are forbidden in the Scriptures both of the Old and New Testament to Marry, accordingly as is set forth in the Table aforesaid. By **Edward Wells.** 12mo. London, 1718.

Abhandlung von den Ehegesetzen Mosis welche die Heyrathen in die nahe Freundschaft untersagen. By **Joh. David Michælis.** 4to. Göttingen, 1755; 1768. 1755

The Case of Marriages between Near Kindred particularly considered . . . By **John Fry.** 8vo. London, 1756; 1773. 1756
Printed Anonymously. The second edition has 57 more pages.

Disquisitio de Nuptiis Naturali et Civili Jure Incestis. By **Phil. Jac. Greiner.** Strasburg, 1775. 1775

D. Phil. Jac. Heislers. . . . juristische Abhandlung von Veryährung der Blutschande und übrigen fleischlichen Vermischungen in verbothenen Graden. 4to. Halle, 1778. 1778

Tractatio contra matrimoniis comprivignorum. By **Samuel Bohle.** [*Circa* 1780.] 1780

D. Philipp Jakob Heislers. Juristische Abhandlung und Untersuchung der Frage: Ob die Ehe eines Sohnes mit der Mutter seiner Stiefmutter den Rechten nach zugelassen sey? 4to. Halle, 1783. 1783

1787 Dissertatio inauguralis iuridica sistens Historiam et Rationem Iuris Incestum Prohibentis . . . pro gradu doctoris . . . submittit. **Georgius Simon Seyfried.** 4to. Tubingen, 1787.

1790 'Explanation of the Reezons why marriage iz prohibited between Natural Relations.' By **Noah Webster,** Junior. *In his Essays*, No. xxvi. pp. 322–324. 8vo. Boston, 1790.

1796 Commentatio de Impedimento matrimonii ob consanguinitatem et affinitatem secunda diversa quibus in Germania utimur jura. By **Wilhelm Ferdinand Wiese.** 4to. Halle, 1796.

1802 Critische und systematische Darstellung der verbotenen Grade der Verwandtschaft und Schwägerschaft bei Heirathen, nach dem mosaischen Gesetze, dem römischen und canonischen Rechte, und den protestantischen Kirchenordnungen. By **Karl August Moritz Schlegel.** 8vo. Hanover, 1802.

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1824 Vergleichung des gemeinen Kirchenrechts mit d. Preuss. allgem. Land-Rechte in Ansehung der Ehehindernisse. By **Daniel.** 8vo. Berlin, 1824.

Dissertatio inaugurata juridica de matrimonio ejusque impedimentis. By **J. B. Jonghe.** 4to. Bonn, 1824.

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1827 De jure ecclesiæ catholicæ statuendi impedimenta matrimonium dirimentia. Dissertatio canonica. By **N. Munchen.** 8vo. Cologne, 1827.

1834 Commentaries on the Conflict of Laws, Foreign and Domestic, in regard to Contracts, Rights, and Remedies, and especially in regard to Marriages, Divorces, Wills, Successions, and Judgments. By the Hon. **Joseph Story.** 8vo. Boston, 1834. Also, 8vo. Edinburgh, 1835; 8vo. London, 1841; 8vo. Boston, 1846; 1857; 1865; 1872.

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Inquiry into the Christian Law, as to the Relationships which bar marriage. By **William Lindsay.** 12mo. Glasgow, 1855; 8vo. London, 1871. 1855

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Traité pratique des empêchements et des dispenses du mariage. By M. l'Abbé **Brillaud.** 8vo. Paris, 1872. 1872

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The Statutes now in force relating to Marriages of Consanguinity and Affinity. 28 Henry VIII. cap. 16; 32 Henry VIII. cap. 38; 5 and 6 William IV. cap. 54. Together with The Repealed Statutes 25 Henry VIII. cap. 22; 28 Henry VIII. cap. 7. M. L. R. A. Fol. London, 1872.

Die Kanonischen Ehehindernisse nach dem geltenden gemeinen Kirchrechte. Für den Kuratklerus praktisch dargestellt. By **J. Weber.** 8vo. Freiburg in Breisgau, 1872; *Ibid.* 1875. 1875

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History of the Law of Marriage between persons within the Prohibited Degrees of Consanguinity and Affinity prior to August 31, 1835, and the Present Law since then. By **Philip James Wingfield.** 8vo. London, 1879.

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De impedimentis matrimonium dirimentibus ac de processu judicali in causis matrimonialibus . . . cum appendice documentorum. By **Jos. Mansella.** 8vo. Rome, 1881. 1881

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HENRY VIII.'S DIVORCE.

1524 State Papers illustrative of the Reign of Henry VIII., published under the authority of Her Majesty's Commission, with a general index. 11 vols. 4to. London, 1830–1852.

Letters and papers, foreign and domestic, of the reign of **Henry VIII.** Preserved in the Public Record Office, the British Museum, and elsewhere in England. Arranged and catalogued by J. S. Brewer :—

Vol. IV.	1524–30.	Introduction.	8vo.	London, 1875.
„ „	1524–26.	Part I.	„	„ 1870.
„ „	1526–28.	„ II.	„	„ 1872.
„ „	1529–30.	„ III.	„	„ 1876.

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Vol. V.	1531–32 . . .	8vo.	London, 1880.	
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1528 Kotser Codicis **R. Wakfeldi**, quo præter Ecclesiæ Sacrosanctæ Decretum probatur Coniugium cum Fratria carnaliter cognita, illicitum omnino, inhibitum, interdictumque esse tum naturæ iure, tum iure diuino, legeque euangelica atque consuetudine catholica ecclesiæ orthodoxe. 4to. London, 1528.

1529 Calendar of Letters, Despatches, and State Papers relating to the negotiations between England and Spain, preserved in the Archives at Simancas and elsewhere. Edited by Pascual de Guyangos. Part I. vol. iv. 1529–30. 8vo. London, 1879.

1530 Gravissimæ, atque exactissimæ illustrissimarum totius Italiæ, et Galliæ. Academiarum censuræ, efficacissimis etiam quorundam doctissimorum uirorum argumentationibus explicatæ, de ueritate illius propositionis, Videlicet quod ducere relictam fratris mortui sine liberis ita sit de iure diuino et naturali prohibitum : ut nullus Pontifex super huiusmodi matrimonijs contractis, siue contrahendis dispensare possit. 4to. London, 1530.

In English. 16mo. London, 1530 ; sm. 8vo. London, 1531.

Elegans consilium pro illustrissima Regina Angliæ per magnificum D. **Bernardum de Sanctis** advocatum consistorialem et regium consiliarum. Fol. Naples, 1530. 1530

Tractatus reuerendissimi Domini D. **Thomæ de Vio Caietani** cardinalis sancti Sixti, ordinis Prædicatorum, de coniugio regis Angliæ cum relicta fratris sui. Sm. 8vo. Rome, 1530.

Determinatio D. **Raphælis Comensis** Canonici Regularis, facta super contractu matrimoniali Clementis. Henrici Anglorum Regis Octaui, qui contraxit cum Fratrissa de mente Theologorum. 4to. [Padua] 1530.

De Cavsa Matrimonii Serenissimi Regis Angliæ liber. By **John Fisher.** 4to. [Alcala] 1530.
Also in his *Opera*, Wirceburg, 1597; and at end of vol. ii. of Collier's 'Ecclesiastical History.'

A glasse of the truthe. [By **Henry VIII.**] Sm. 8vo. London [1530].
There were at least four other editions between 1530–50.

The Practyse of Prelates. Whether the Kynges Grace may be seperated from hys Quene, because she was hys Brother's Wyfe. By **William Tyndale.** 16mo. Marburg, 1530.
Also London, n.d. 16mo. and in his 'whole works.'

Roberti Wakfeldi sacrarum literarum professoris eximii Regiique sacellani syntagma de hebræorum codicum incorruptione. Item eiusdem Oratio Oxonii habita, una cum quibusdam aliis lectu ac annotatu non indignis. 4to. [London, *circa* 1530.]

Solennis atque elegans Tractatus In causa matromonij Serenissimorum dominorum Henrici et Catherine Anglie Regum, Editus per . . . **Ferdinandum de Loazes** . . . contra hereticam et Apostaticam prauitatem Inquisitorum apostolicum. Fol. Orihuela, 1531. 1531

Concilium D. **Hieronymi Preuidelli** pro Invictiss. Rege Angliæ, una cum responsione ejusdem ad consilium domini Bernardi Reatini pro illustrissima Regina editum. Fol. Bologna, 1531.

Quæstio de Matrimonio sereniss. Reginæ Angliæ nunquam Incudine subtilissimi Dr. **J. Scoti.** 4to. Naples, 1531.

Potestatis Ecclesiasticæ super gradus consanguinitatis et affinitatis, diuina lege a conjugio prohibitos, Catholica declaratio a **Bartholomæo Spineo.** 4to. Bologna, 1531.

Tractatus de mon dissolvendo Henrici et Catharinæ matrimonio. By **Thomas Abell.** [*Circa* 1532.] 1532
There is probably no copy of this work existing. See Chalmers' Biogr. Dict.

Invicta Veritas. An answere. That by no maner of law, it maye be lawfull for the moste noble Kinge of Englande, Kinge Henry the eyght to be diuorsed fro the quenes grace his lawful and very wyfe. By **Thomas Abell.** 4to. Luneberg, 1532.

1532 . . . De licentia ac concessione Sanctissimi D. N. et ad instantiam præclari D. excusatoris illustrissimi ac inuictissimi Regis Angliæ Nos **Sigismondus Dondolus** de Pistorio . . . et **Michael de Conradis** de Tuderto . . . præscripti illustrissimi Regis et D. excusatoris Aduocati in sacro publico Pontificio consistorio, præsidente summo Pontifice cum suo sacrosancto Senatu infrascriptas Conclusiones pro tenui posse nostro sigillatim, ac singulariter defensare conabimur. 4to. Rome, 1532.

Ad invictiss. Cæsarem Carolum quintum Epistola dedicatoria ab **Alphonzo Henriquez.** Ejusdem de Matrimonio Reginæ Angliæ Liber unus. Ejusdem defensionum pro Erasmo . . . etc. 4to. Naples, 1532.

Novatus, Hieronymus, Mediolanen. Advocatus. Pro serenissima D. Catherina de Castiglia de Arragonia Angliæ Regina Allegationes. 4to. [Mediolani, 1532.]

Disceptationes tres **H. Preuidelli** Bononiæ legum professoris pro illust. rege Angliæ in Sacro Publico Pontificio Consistorio, coram summo pontifice Clemente septimo et sacrosancto ejus Senatu habitæ mensibus Aprilis et Maii. 4to. Rome, 1532.

Non esse neque Divino, neque Natura Jure prohibitum, quin S. Pontifex dispensare possit, ut Frater de mortui sine Liberis Fratris Uxorem legitimo Matrimonio sibi possit adjungere, adversus aliquot Academiarum Censuras, tumultuaria et per brevis Apologia sive Confutatio, etc. By **Jo. Ludovic Vives.** 4to. Luneberg, 1532.

1533 Philalethæ Hyperborei in Anticatoptrum suum quod propediem in lucem dabit, ut patet proxima pagella, Parasceve, sive adversus improborum quorundam temeritatem, Illustrios Angliæ Reginam ab Arthurio Walliæ principe priore marito suo cognitam fuisse impudenter et inconsulte adstruentum, Susannis extemporaria. **Anonymous.** 8vo Luneberg, 1533.

Acta Curiæ Romanæ in Causa matrimoniali cum Catharina Regia. 16mo. London, 1533.

Exemplar siue transcriptum aut copia literarum Apostolicarum Sanctissimi Domini nostri D. **Clementis Papæ Septimi**, sub plumbo expeditarum, Executorialium sententiæ per Sanctitatem suam nuper in favorem Serenissimæ Dominæ Catherinæ Angliæ Reginæ, contra illust. Principem Dominum Henricum VIII., Angliæ Regem, ac quandam annam dictam de Boland, nominatim et in specie latæ tum insinuatione seu notificatione illarum et in eis contentorum, eisdem Regi Annæ, et certis aliis in illis contentis et comprehensis per ædictum factis. 4to. [1533.]

Literarum apostolicorum **Clementis Papa VII.** in favorum Catherinæ Angliæ Reg. contra Henrici VIII. 4to. [Rome] 1533.

Articles deuised by the holle Consent of the Kinges moste honourable Counsayle, his Grace's License obtayned thereto, not only to exhorte, but also to enfourme his louinge Subjects of the Truthe. 8vo. London, 1533.

Anglici Matrimonij. Sententia diffinitiua Lata per sanctissimum Dñm Nostrum D. **Clementem Papa VII.** in sacro Consistorio de Reuerendissimorum Dominorum. S.R.E. Cardinalium consilio super validitate Matrimonij inter Serenissimos Henricum VIII. et Catherinam Anglie Reges contracti. Pro eadem Serenissima Catherina Angliæ Regina, contra Serenissimum Henricum VIII. Angliæ Regem. Lata fuit Romæ. (*A Broadside.*) 1534. 1534

De Vera Obedientia Oratio. By **Stephen Gardiner.** 8vo. London, 1534.

With a preface by **Edmund Bonner.** 16mo. Hamburg, 1536. *Translated into English*: 16mo. Rome (London, *Singleton*), 1553; and 16mo. Rome (London, *Wood*), 1553.

Consilium super viribus Matrimonii Serenissimorum Henrici VIII. et Catherinæ Regum Angliæ, a D. **Ludovico a Schora** Louaniensi, utriusque juris professore, Cesariæ Majestatis a consiliis et requestarum magistro, summa diligentia scriptum. 4to. Louvain, 1534.

De Matrimonio Serenissimi Regis Angliæ Henrici Octaui Congratulatio disputatoria **Iohannis Cochlei** Germani, ad Pavlvm Tertium Pont. Max. 4to. Leipsic, 1535. 1535

Bulla S.D.N. **Pauli** divina providentia **Pape III.** Citatoria Regis Angliæ et sequacium ejus: sub poena excommunicationis et privationis Regni ac omnium aliorum bonorum, et nonullis aliis gravioribus censuris et penis. 4to. [Rome, 1535.]

Lud. Nogoralæ Com. Veronensis disputatio super Reginæ Britannorum divortio. 4to. [1535?]

Antiqva et Insignis Epistola Nicolai Pape. I. Ad Michaelem Imperatorem Augustum. . . . Breuis historiarum illius temporis commemoratio, Ex Reginone vetusto Chronographo Ad Regem Anglie Henricum VIII., Defensio Ioannis Episcopi Roffensis et Thome Mori, aduersus Richardum samsonem Anglum per **Ioannem Cochleum.** Fragmenta quarundam Tho. Mori Epistolarum ad Erasmum Rot. et ad Joannem Coc[hleum]. 4to. Leipsic, 1536. 1536

Illustrissimi ac Potentissimi Regis, Senatus, Populique Angliæ, sententia, et de eo Concilio, quod Paulus episcopus Rom. Mantuæ futurum simulauit: et de ea bulla, quæ ad calendas Nouembres id prorogarit. [By **Henry VIII.**] Sm. 8vo. London, 1537. 1537

Scopa **Johannis Cochlæi** Germani, in Araneas Ricardi Morysine Angli. 4to. Leipsic, 1538. 1538

Apomaxis calumniarum convitiorumque, quibus Joannes Cochlæus homo theologus . . . contra Henrici VIII. nomen obscurare . . . epistola studuit. By Sir **Richard Morysin.** 4to. London, 1538.

Tractatus de non dissolvendo Henrici regis cum Catharina matrimonio. By **Edward Powell.** 4to. London [*circa* 1539]. 1539

No copy is at present known to exist.

1540 A Treatise of Marryinge occasioned by the pretended Divorce of King Henry y^e^ Eigth from Q. Catherine of Arragon, divided Into three Bookes written by the Reverend & learned **Nicholas Harpsfield.** [MS. *circa* 1540.]

There is a copy in the Grenville collection; one in the library of New College, Oxford; and two others.

A History of the Pretended Divorce, etc. Edited by the Rev. N. Pocock, from the four MSS. 4to. (Camden Society) 1868.

1546 Tractatus de Concilio generali et de matrimonio regis Henrici VIII. Anglici . . . per **Hieronymum de curiel** decretorum licentiatum in inclita Salmanticensi academia nunc noviter in lucem ædita. fol. Salmanticæ, 1546.

Pauli Jovii historiarum sui temporis tomi duo. Fol. Venice [1546].

Other editions at Basle and Venice; also 2 vols. fol. Florence, 1550–52. Paris, 1552, 1553.

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In Italian: 2 vols. 4to. Florence, 1551–53; Venice, 1581, and others.

In Spanish: 2 vols. fol. Salamanca, 1562, and others.

1554 Oratio **Leonhardi Goretii,** Equitis Poloni, de matrimonio Regis ac Reginæ Angliæ, Hispaniæ, etc. Ad Populum Principesque Angliæ. 4to. London, 1554.

1558 The History of Grisild the Second; a narrative in verse of the divorce of Queen Katharine of Arragon. By **William Forrest.** (1558.) Printed for the first time by W. D. Mackray (Roxburgh Club). 4to. London, 1875.

1561 **F. Alfonsi Virvesii** Vlmetani theologi, Canariensis episcopi, de matrimonio regis Angliæ, Tractatus. Cuius cathologum & ordinem proxima facie inuenies. Impressvm recens, Anno MDLXI. 4to.

1562 **G. Cognati Nozereni** de iis qui Romæ ius dicebant olim deque corum origine et potestate libellus. Præteria de Regis Angliæ divortio sententia ejusdem ad Clariss. Jureconsultum Udair Zasium. Una cum aliquot de legali studio epistolis ejusdem. 16mo. Basle, 1562.

1585 Doctissimi viri **Nicolai Sanderi,** de origine ac progressu Schismatis Anglicani liber. . . . Editus et auctus per Edouardum Rishtonum. 8vo. Cologne, 1585.

With Alterations. 8vo. Rome, 1586; 1588; Cologne, 1610, 1628; 8vo. Ingolstadt, 1586.

French translation: 8vo., s.l. 1587, 2 editions; Augsburg, 1587; 12mo. Paris, 1676; 1683; 1685; 1688.

Italian translation: 4to. Bologna, 1591; 4to. Rome, 1594.

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Edmundi Campiani Anglic e Soc. Jesu Decem Rationes propositæ in causa fidei, et opuscula ejus selecta (inter alia Narratio Divortii Henrici Octavi ab uxore Catharina). *First printed at the end of* Harpsfield's Hist. Angl. Eccl. Fol. Douai, 1622. 12mo. Antwerp, 1631. 1622

Historia Anglicana Ecclesiastica a primis gentis susceptæ fidei inconabilis ad nostra fere tempora dedvcta . . . adjecta breui narratione de Devortio Henrici VIII. Regis ab vxore Catherina, etc. By **Nicholas Harpsfield.** Fol. Douay, 1622.

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Circulaire du Ministre de l'Agriculture, du Commerce et des Travaux Publics, relativement à la Question des Mariages Consanguins ; instructions sur les Moyens d'assurer l'exactitude des renseignements à fournir annuellement sur le nombre des mariages entre cousins. germains et issus de germains. By **Armand Bèhic.** Paris, le 30 Octobre, 1863. 1863

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Another Review in the Archives générales de Médecine, 6th series, vol. iii. pp. 216–218, February. 8vo. Paris, 1864.

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'Un Mot sur le Danger des Mariages Consanguins, Réponse à une Attaque, État de la Question.' By **Fr. Devay.** 8vo. Paris, 1863.

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'De la Consanguinité et des Mariages Consanguins.' By HERVIER, pp. 385–391.

'Note pour servir à l'Histoire des Mariages entre Consanguins.' By A. RODET, pp. 392–405.

'De la Nécessité des Croisements entre Individus de la même Espèce dans le Règne Végétal,' pp. 406–417. By ERNEST FAIVRE.

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'Notes Historiques et Critiques sur les Alliances Consanguines.' By JUTET, pp. 433, 434.

An abstract only.

'De la Consanguinité et des Mariages Consanguins.' By SANSON, pp. 435–442.

'Note sur la Variété des Difformités que produisent les Mariages Consanguins.' By DIONIS DES CARRIÈRES, pp. 442–445.

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